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RETORT BENCH OPERATION

THE greatly improved results obtained in modern carbonising plant as compared with that of say 40 years ago have only been obtained, as in most other engineering technique, by an increase in complexity. Horizontal and inclined retort settings of that period were indeed frequently built to the designs and under the direct supervision of those who were to operate them and who therefore could be expected to develop their own technique of operation. The new vertical retorts, however, were built by specialists to their own patented designs, and not only were they expected to give operators detailed instructions to enable plants to be safely and efficiently operated to the satisfaction of the purchasing undertaking, but the contractor was obliged to protect himself by laying down the conditions of operation in which the guaranteed results could be realised.

Very soon new materials of construction introduced to secure ever increasing efficiency called for increased care in handling. Silica refractories, for instance, called for meticulously regulated temperatures right from the beginning of 'lighting up' to the attainment of those at which carbonising could be commenced. Refractories generally have never ceased to be the principal preoccupation of the retort house technician. To secure a profitable life they must be heated up and cooled down to programmes predetermined in every detail. Incidental operations such as rodding, scurfing, steaming, cannot be left to the casual attentions of the stoker but must be supervised at all points by men fully qualified technically to appreciate the reasons for the procedure laid down. And the constructor is expected not only to lay down the procedure but to explain the reasons for it.

These 'working instructions' have been embodied in handbooks which have been more or less freely circulated among engineers operating continuous vertical retorts. They have a unique character in that they present a fairly complete account of carbonisation in continuous vertical retorts in general together with working instructions relative to the particular system to which each refers. One of the latest of these publications is the 'Notes on Operation of Glover-West Vertical Retorts.' This excellent manual is a reprint in book form of a series of articles which had already appeared in West's Gas Improvement Company's house journal *West's Gas* with the addition of a summarised collection of standard tests of coal, coke, and gas, mostly covered by British Standard Specifications. Sufficient detail is provided for these notes to be of practical use in retort house control while reference is given to original sources for further detail as may be required.

It is a healthy sign, however, that from time to time the proceedings of (particularly) the junior gas associations contain papers relating to the operation of actual installations—papers which are often marked by a free discussion of accepted or 'official' procedure. An example of this was the very interesting paper presented by Mr. J. Burbridge to the Yorkshire Juniors. Much of the contents related pretty exclusively to a particular example of a particular type of plant. We agree that this is excusable in a 'junior' paper. But we hope that readers will be able to distinguish what is particular and what is general.

One cannot help thinking that a more careful study of the excellent manual above referred to would have saved Mr. Burbridge from some of the questionable statements which are found here and there in his paper. What justification, for instance, is there for the suggestion that the enlarged steaming chamber type of retort may require a greater fuel consumption than the straight-through retort? It is possible, of course, that he may have in mind that the latter rather than the former is generally associated (as suggested by Dr. S. Pexton) with some additional heating of the secondary air circulated round the base of the retort. Whether some such recuperation would reduce fuel consumption depends on whether the residual heat of the coke is fully recovered or not in the steaming process.

Then, in the discussion of step-grate producer

practice, we read that 'filling and clinkering are carried out to a regular time-table' followed by the statement of the obvious fact that 'infrequent feeding results in a thin fuel bed.' The important thing, of course, is the 'regular time-table.' To quote the constructors' manual: 'The coke level . . . . should always be maintained well above the curtain arch.' The standard design provides for six hours storage at full capacity above this arch and the instruction is to charge every four hours and then to take care to fill the producer completely on each occasion. Infrequent feeding is a very risky practice! It is important, too, to maintain a definite pressure in the brick-built step-grate producer—best indicated by a definite pressure at the point of gas entry to the setting—so that any leakage of gas will be rather outward than inward. The constructors' manual stresses the advantage of extending the clinkering period as long as possible, depending almost entirely upon the nature of the coal used, and gives the reasons why—the principal reason being that disturbance of the fire upsets the gas-making conditions. The fire should be left undisturbed as long as possible.

TWO SCHOOLS OF THOUGHT

THE problem of producer fuel is a vexed question. Perhaps there are two main schools of thought, consisting of those who wish to use unsaleable breeze in the producer and those who wish to select the fuel best adapted to efficient producer gas production. The first is somewhat hampered by the fact that there is not enough unsaleable breeze to do the whole job. Several suggestions have been made to get round the difficulties of using breeze in the producer. If breeze means all through 1 in. then there is the trouble with the 'fines' through $\frac{1}{4}$ in. which always contain the highest percentage of ash and are most likely to give trouble in the producer fire. The best procedure is to screen out as much as possible below $\frac{1}{4}$ in.

There is a good deal to be said for the second view. With the recent introduction of a really effective chain grate stoker there is no difficulty, in works where there is sufficient capacity to absorb it, in burning breeze—unscreened and even wet breeze—in the Lancashire boiler. It is another form of waste heat recovery. And there is the definite fact that a producer of any kind works to its maximum capacity and efficiency with fuel of sizes within a limited range—not necessarily a big size. It is possible that savings in costs of construction and operation might balance the extra cost of a pretty carefully graded producer fuel even of a highly saleable size. But probably there is most to be said for using run-of-retort coke—always, we think, with the 'fines' roughly screened out.

The step-grate producer, however, can no longer be described as the 'standard type for continuous vertical retorts.' The mechanical producer is rapidly taking its place, even in designs where the sensible heat of the gas is, though not necessarily, sacrificed in the interests of an ultra-clean fuel supply to the settings. It is being forced upon the industry by considerations of labour supply. There is an art in the manipulation of a step-grate producer fuel bed which is not willingly acquired by the workman of today—and the work remains heavy and unpleasant. And there are some compensations in the mechanical producer which though not reflected in 'hot gas efficiency' do come out in quite low overall fuel consumption—the constant quality of the gas, the reduction of loss of combustible matter in the ash, the possibilities of automatic control. But the mechanical producer is, we think, sufficiently expensive to warrant the use of a carefully graded fuel rather than the attempt to force it to use unsaleable breeze with considerable reduction of capacity per unit.

FORCED PRODUCTION

THE increasing demand which is being made on plant available is tending to outstrip the supply of new plant and of new material for maintenance and renewal. It is natural therefore that the retort house operator should be tempted to force his retorts into production beyond their normal capacity. There was always a conflict of opinion whether it was good policy to get high output with short life or to get a good output with a longer life. We think that today conservation of plant and economy in refractory material would tend to discourage the use of retort plant to meet peak demands. The 'nominal capacity'—with which 'throughput' is not synonymous—laid down by the contractor is not, we suggest, necessarily the most efficient production figure. It is rather the figure which can be safely guaranteed under normal working conditions as laid down in the specification and with the coals specified. In actual practice there will be variations, particularly in the properties of the coals received from day to day, which may enable the guaranteed results to be improved upon. Throughput is merely incidental to make per ton at the desired calorific value and a satisfactory output per retort.

For the reasons mentioned above we think it is very doubtful whether it is good policy to increase the temperatures of the combustion chambers above those specified by the contractor. The trend in the modern designs of vertical, retort settings is to secure, by a careful distribution of heat supply to the combustion zone, a high average with a minimum of difference between the average and the maximum temperature at any one point or points. The advantages are obvious. Pressure maintained in the combustion chambers is also an important factor in keeping a good, even average temperature.

OPTIMUM STEAMING RATE

THERE seems to be some misunderstanding too about the factors which govern the rate of steaming. This is determined with almost arithmetical precision by the quantity of water gas which must be generated within the retort to produce the desired calorific value, multiplied, of couse, by a factor representing the proportion of steam admitted which is

actually converted. No such dogmatic statement as that 5% is the most profitable rate of steaming can be accepted—such a statement is quite irrelevant to the simple facts. The most efficient rate of steaming is *the minimum which will produce the desired result*—nothing more abstruse than that.

Starting then with the three figures laid down in the guarantees, suitably corrected for the properties of the coal actually in use, the operator may vary his throughput, his steaming, his distribution of combustion chamber temperature, to give *either* optimum make per ton or optimum thermal output per retort. And whatever may be the monetary economy of other methods of working we suggest that the optimum coal economy will be realised by minimum steaming to produce gas at the declared calorific value. There are many points of interest in the paper. He disclaims any attempt to take account of recent developments. Among these is the trend in the direction of building carbonising plant of large capacity in benches of moderate dimensions rather than in one large bench. Efficient insulation and modern construction enables this to be done without increased radiation losses and with the great advantage that a self-contained bench can be let down for repairs without disturbing the rest of the plant. Refractory materials remain the principal preoccupation of the maintenance engineer who must be supported by the operator. The new techniques of downward scurfing, retort welding, and airborne sealing have done much to conserve retort material. Instrumentation has increased the power of the operator to control the process throughout. But here a word of warning may be repeated. Over-elaboration and instrumentation merely for the sake of instrumentation should be avoided. Instrumentation is useless if observations and charts are filed without playing their full part in a properly organised scheme of control.

AMENITY QUESTIONS

Gas boards whose proposals for extending gasworks have met with opposition on the ground of spoiling amenities will have noted that the North Wales Hydro-Electric Power Bill which was given its second reading in the House of Commons shortly before the Easter recess exempts from control by the local planning authorities whatever works and installations the British Electricity Authority may find 'necessary or convenient' in connection with the developments proposed in North Wales. The Bill is a private one, promoted by the British Electricity Authority, but it has the backing of Mr. Geoffrey Lloyd, Minister of Fuel and Power, who, in the debate on the second reading, said there had been an extraordinary measure of agreement between private enterprise, a nationalised industry, and a famous firm of engineering consultants. But the amenity questions were important and practical, and he assured the House that as a result of consultations between the Minister of Housing and Local Government, his own department, and the British Electricity Authority, the B.E.A. wished to put back into the Bill the ordinary planning clause, which was the standard form for planning in private Bills. Mr. Lloyd suggested that it should be obligatory on the B.E.A. to consult the Royal Fine Arts Commission and the National Parks Commission about building and other works, and that the Authority should employ a landscape consultant whose advice ought to be available to the B.E.A. and to the National Parks Commission.

RETURN TO REALISM

Unanimously elected President of the Federation of British Industries for a second year of office, Sir Archibald Forbes expressed the view at the annual meeting of the Federation on April 9 that the discouraging of saving and of the will to undertake responsibility and risk is one of the most dangerous aspects of the present situation. The ability of industry to save from its own resources is now greatly limited. The individual who formerly contributed the vital risk-bearing capital is likewise unable to have and does not find the return sufficiently attractive if he could. Apart from the question of material reward, it is probably the case that the frustrations arising from the restrictions and irritations of bureaucratic control are now becoming insupportable when there are signs of a change from a sellers to a buyers market demanding the utmost flexibility of operation. If those tendencies are not reversed, they will result in the undermining of the whole industrial structure. The answer suggested by Sir Archibald must be a return to realism in the national finances by the fostering of enterprise, effort, and self-reliance. This can only be done by a courageous and determined effort to reduce civil expenditure and therefore taxation. The recent Budget made a move in this direction, but the movement must go further if it is to be successful. 'There can be no doubt,' said the President, 'that the imposition of an excess profits levy is a grave blow to industrial enterprise and competitive efficiency at a time when the encouraging of these qualities is fundamental to the strengthening of sterling and the attaining of economic stability. A tax in this form cannot fail to be productive of inequity and stifling to initiative. The concessions in the profits tax will in the main only represent a net benefit where operations are more or less static. The enterprising and developing undertaking—notably that which has responded to the call for greater exports—will be the most severely hit. The adverse effects will go beyond the immediate financial consequences which are most serious in themselves and will in many cases effectively amount to a levy on industrial capital. It will create a general feeling of disheartenment at the very time when the need is for the greatest concentration of effort. The tax must either be withdrawn or at the worst radically modified to remove its worst features.'

Outside these difficulties industry is faced with a major problem in the change in pattern of activity which is necessitated by the requirements of the defence programme and the need to maintain and increase the volume of exports of manufactured goods. This will involve much readjustment and in some cases contraction of output. The sale of consumer goods abroad has become more difficult partly owing to growing competition from other sources and partly because of restrictions imposed as a result of the economic problems of other countries. This necessitates an increase in the export of capital goods, and while it is recognised that this is inevitable in the circumstances, its effect upon the competitive power of British industry will be grave if it leads to curtailment of re-equipment in this country for more than a short time. By denuding industry of the necessary funds through increased taxation, the postponement of re-equipment will be made much longer term in that it will not be possible to find the money to purchase the equipment as and when it becomes available.

Personal

Mr. G. S. Causon and **Mr. A. E. Nicol,** who have been in the employ, in various positions, of the Hackbridge and Hewittic Electric Company, Ltd., for nearly 25 years, have been appointed Directors of the Company.

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Mr. William Smith has been appointed Deputy Chairman of the Scottish Division of the National Coal Board in succession to **Dr. William Reid,** who became Chairman of the Division in February. Mr. Smith has been Area General Manager of the Central East Area of Scotland since 1947.

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Major Alex Bujnowski, M.C., Sales and Publicity Officer, Glasgow District, Scottish Gas Board, has received intimation that the Queen has been graciously pleased to sanction his admission as an Officer of the Most Venerable Order of St. John. Major Bujnowski was recently appointed Treasurer of the St. John Foundation Hospital, Glasgow, in succession to Lord Inverclyde.

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Mr. Edwin Bayliss, J.P., Chairman of the North Thames Gas Consultative Council, was on April 9 elected Chairman of the London County Council in succession to Mr. J. W. Bowen, who became Chairman in 1949. Mr. Bayliss, who is 55, has been Chairman of the General Purposes Committee for the past three years. He lost an arm during the first world war and was one of the founders of the British Legion.

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Mr. **John V. Sheffield,** the Chairman, and Mr. **Vincent Senior,** Joint Managing Director of Carter-Horseley, have joined the Board of Horseley Bridge & Thomas Piggott, Ltd., Mr. Sheffield as Deputy Chairman. This is consequent upon the merger between Horseley Bridge & Thomas Piggott, Ltd., and Carter-Horseley (Engineers), Ltd., Mr. **John W. Baillie,** Joint Managing Director, has resigned from the Board of Carter-Horseley (Engineers), Ltd., but continues as Managing Director of the parent company, Horseley Bridge & Thomas Piggott, Ltd.

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Sir Frederick J. West, G.B.E., was entertained on April 18 by the officials of West's Gas Improvement Company to mark their appreciation and esteem on the occasion of his 80th birthday (which was actually on April 17). Sir Frederick has relinquished a great measure of the control of the affairs of the Company to younger hands but he continues to take a keen interest in them as well as in the gas industry and in those aspects of industry and industrial relations in Manchester and district with which he has been so long associated. He was greatly touched and encouraged by the many expressions of goodwill which he received from colleagues and associates in the gas industry particularly.

Obituary

Mr. Orlando G. R. Beere, Director of the Selson Machine Tool Co., Ltd., one of the '600' group of companies for the past 15 years, died on April 7 after prolonged ill-health. Mr. Beere, who was in his 75th year, was well known throughout the machine tool industry.

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Mr. George Wright, Engineer and Manager of the Lincoln Corporation Gas Department from 1930 until the nationalisation of the gas industry in 1949, when he retired, died at Lincoln on April 11, aged 69. He was Managing Director of Penney and Porter, Ltd., Engineers, before his appointment as the fourth head of the Lincoln undertaking, which attains its centenary next year, and the first officer to hold the dual appointment as Engineer and Manager of the undertaking. He was President of the Eastern Counties Gas Managers' Association (forerunner of the Eastern Section of the Institution of Gas Engineers) in 1936, and his Presidential Address was a modest account of remarkable achievements over a short period of years in which the output of gas markedly increased and the Lincoln gasworks became a show place. Mr. Wright was City Sheriff in 1930, and in 1940 he was appointed Chairman of the Central Lincolnshire Area Advisory Committee which was established to meet possible wartime requirements. He was President of the Lincoln Engineering Society in 1937 and became a member of the Institute of Fuel in 1946. On his retirement in 1949 he was presented with a radio set from his colleagues at the Braceborough gasworks, the gift being handed over by his former Deputy, Mr. J. S. Marshall, now Deputy Divisional General Manager, Lincolnshire Division, East Midlands Gas Board.

Letter to the Editor

GAS LIQUOR AS FERTILISER

DEAR SIR,—In your Assistant Editor's article on 'The Use of Gas Liquor as a Fertiliser,' (*Gas Journal 269,* No. 4625 (1952), 224) he made some remarks to the effect that the Lord President's Office was adopting a 'hush hush' policy and that the matter was 'cloaked in secrecy and shrouded in mystery.'

I should like to assure you that this statement is contrary to the facts. Far from wanting to adopt a 'hush hush' attitude, it is our endeavour in this office to catalyse activity, and to give all help possible, in the development of projects by means of which the conservation or better utilisation of our resources can be achieved.

Yours faithfully,

R. A. E. GALLEY.

Office of the Lord President of the Council,
Great George Street, S.W.1.
April 17, 1952.

[*We welcome this assurance of help from the Lord President's Office. We would add, however, that at the time our article was being prepared neither the Southern Gas Board nor the spraying contractors appeared anxious to discuss the subject in any detail, giving us the impression that their attitude was influenced by the Lord President's request for reports.*—ED. G.J.]

HOUSING FOR MINERS

To assist the special housing programme for miners, the National Coal Board set up a Housing Association. The Association has appointed as its general manager Mr. Miles Hudson, at present principal surveyor with the Ministry of Housing and Local Government. He has been seconded to the Association by the Ministry and has taken up his appointment at the headquarters of the National Coal Board. Mr. Hudson has been specially concerned with the development of non-traditional permanent housing. He was formerly at the Ministry of Works where, among other forms of emergency work, he carried executive responsibility for the repair of bomb damage in London.

The Coal Industry Housing Association has been incorporated as an unlimited private company legally separate from, but entirely financed and controlled by, the National Coal Board. The Directors are Sir Hubert Houldsworth, Chairman of the National Coal Board; Mr. W. J. Drummond, Deputy Chairman; Sir Geoffrey Vickers, manpower and welfare member of the Board; Sir Charles Ellis, F.R.S., scientific member; and Mr. J. Latham, Director-General of Finance.

The British Disinfectant Manufacturers' Association has appointed the following officers and executive committee for the ensuing year: Chairman, A. Ernest Berry (Milton Antiseptic, Ltd.); Vice-Chairman, Sir Knowles Edge (William Edge and Sons, Ltd.); Hon. Treasurer, Victor G. Gibbs (William Pearson, Ltd.). Executive Committee: A. J. Black (Lehn and Fink Products, Ltd.); P. J. Bovill (Newton Chambers and Co., Ltd.); J. H. Chapman (Reckitt and Colman, Ltd.); W. A. C. Hall (Prince Regent Tar Co., Ltd.); W. M. Macmillan (Robert Young and Co., Ltd.); W. Mitchell (Hull Chemical Works, Ltd.); and R. G. Berchem (*ex officio*) (Jeyes' Sanitary Compounds Co., Ltd.). The Secretary is W. A. Williams, M.B.E., B.SC., and the offices are at 166, Piccadilly, W.1.

Diary

April 24.—Midland Juniors: President's Day. Coventry.

April 24.—Institute of Fuel: Annual Luncheon, Connaught Rooms, W.C.2, 12.30 for 1 p.m.

April 25.—Midland Section, I.G.E.: Annual General Meeting, Birmingham.

April 25.—London and Southern Juniors: Jubilee Celebration Dinner, Caxton Hall.

April 25.—Manchester and District Section, I.G.E.: Annual General Meeting, Grand Hotel, Manchester, preceded by luncheon at 12.30 p.m. for 1 p.m.

April 25.—Institution of Chemical Engineers: Thirtieth Annual Corporate Meeting, May Fair Hotel, 11 a.m. Presidential Address. 'Chemical Engineering at the Cross Roads,' Sir Harold Hartley. Annual Dinner, 7 for 7.30 p.m.

April 26.—London and Southern Juniors: General Meeting, East Greenwich, 11.30 a.m. Presidential Address, followed by luncheon; inspection of East Greenwich works, 2.15 p.m.

April 29.—Midland Juniors: Annual General Meeting.

April 29.—East Midlands G.C.C.: George Hotel, Grantham, 11.30 a.m.

May 1-3.—East Midlands Gas Board: Staff Conference, Skegness.

May 2.—North of England Section, I.G.E.: Annual General Meeting, Three Tuns Hotel, Durham, 11 a.m. Paper by Mr. F. Bunting, Chief Accountant, Northern Gas Board.

May 5-6.—Combustion Engineering Association: Annual Conference, Palace Hotel, Buxton.

May 5-16.—British Industries Fair, Castle Bromwich. Gas Council stand No. D. 641/540; Coke Department stand No. D.643.

May 8-9.—Wales and Monmouthshire Section, I.G.E.: Spring Meeting, Royal Gatehouse Hotel, Tenby.

May 9.—London and Southern Juniors: 'Design in Copper Tubing,' H. T. Wright (North Thames), 178, Edgware Road, 6.30 p.m.

LABELS FOR GASSING CASUALTIES

FOR a considerable time the Works Safety Committee of the Association of British Chemical Manufacturers has felt that an important contribution to industrial safety would be made if hospitals could have a correct history and diagnosis of cases of gassing sent from chemical works, in order that the appropriate treatment might be instituted without delay. The comparative rarity of the cases, and to a lesser extent the variety of the causative agents, have sometimes resulted in delay in exact diagnosis, and therefore in selecting appropriate treatment, while certain casualties require rather specialised treatment, details of which are often not readily available.

It was thought that if some system could be devised whereby casualties caused by some of the more common gases could have suitable labels or cards sent with them to hospital, setting out details of the first aid treatment they had already received and suggesting the further treatment which might be appropriate, many of these difficulties could be overcome.

The Works Safety Committee, therefore, appointed a panel composed mainly of industrial medical officers to investigate the whole matter. As a result of their deliberations, a series of labels has been evolved. The Council of the Association has welcomed the scheme and has recommended all members who may at any time have gassing casualties to institute this system of sending a card or label with them to hospital. In view of the importance of this matter it was decided to make the information available to a wide circle by issuing it in the form of a booklet, and offering this booklet and labels for purchase by manufacturers and users of chemicals likely to encounter these risks.

Medical members of the panel which drew up the wording for the labels have sought the opinion of a number of hospital medical officers and have been assured that the scheme will be welcomed by these hospitals, provided it is introduced by consultation and discussion beforehand and not simply applied to the first casualty which occurs.

It is not intended to use the labels as instructions to medical staff who are familiar with the action to be taken, but only to give guidance which a casualty officer, faced with the need for immediate action in an unfamiliar type of emergency, could follow with safety, pending further advice.

The scheme has also been brought to the attention of H.M. Chief Inspector of Factories and the Senior Medical Inspector, who welcome it and support it, feeling that emergencies of this type may be dealt with more speedily and effectively and lives may be saved with the collaboration and transfer of information which is envisaged. The medical inspectors will assist in explaining and facilitating the launching of the scheme. The Ministry of Health has also approved the idea.

Copies of the booklet can be obtained from the Association price 3s., post free, cash with order. The labels themselves can be purchased ready for use from the Association of British Chemical Manufacturers, 166, Piccadilly, London, W.1, by quoting the appropriate reference letter on the label, price 2s. per dozen, cash with order. They can be supplied only in minimum quantities of a dozen of any particular label.

LONDON AND SOUTHERN JUNIORS

ON Wednesday, March 12, members of the London and Southern Junior Gas Association paid an afternoon visit to the Homerton Works of Lewis Berger (Great Britain), Ltd., the well-known manufacturers of paints and all surface coatings.

On arrival they were welcomed by Mr. F. C. Hall (Sales Manager of Berger's London Division) and Mr. F. J. Tovey, who related one or two of his experiences when calling on gas undertakings over a period of many years. The party was then divided into small groups and conducted on a tour of the technical laboratories. Members were able to inspect the corrosion cabinet which shows the effect of moisture on paint, ultra violet tests to check the fastness of pigments, bend tests to ascertain the flexibility of paint films, and a weatherometer, which reproduces the effect of weather on a paint film or colour.

Members of the London and Southern Junior Gas Association at the Lewis Berger works. The Senior Vice-President (Mr. C. D. Shann) is seen on the extreme right of the second row.

They also saw a salt spray test to determine the resistance of paint to sea atmosphere and a scratch test to check the hardness of a paint film—in fact, everything which enables the Berger Company to ensure the quality of their finishes for industrial use. An item of particular interest was a metal primer, the pigment base of which is atomised lead which gives it unique rust inhibitive properties.

The visitors were shown the complete process of manufacturing containers from sheet metal, the manufacture and grinding of dry colour pigments, the 'running' (or heating) of gums used in the cooking of varnishes. They were then conducted over a section of the paint and distemper manufacturing plant where they saw modern paint making mills of several types.

At the end of the tour, tea was provided in the staff canteen, and Mr. C. D. Shann (Senior Vice-President of the Association) expressed on behalf of the visitors thanks and appreciation to Berger's for an interesting and instructive visit.

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UNIVERSITY OF MICHIGAN LIBRARIES

Ayr Court has approved the erection of a new 3 mill. cu.ft. gasholder for the Ayr and Prestwick district. The Scottish Gas Board filed the application for space at Weir Street, Ayr. The cost is given as £155,000. Work will not begin for some time and the scheme will link up ultimately with other developments in the area.

Meter Readers from the Consumers' Gas Company of Toronto will soon be carrying wear-and-weather resisting record books made in Birmingham, England, as they make their daily journeys about the Canadian city. An order for 750 special binders has been placed with Kalamazoo, Ltd., of Northfield, Birmingham, specialists in loose-leaf systems. The Canadian gasmen will carry their meter-readings between covers of rubber bonded with impregnated fabric and moulded under pressure to form a skin-stressed product of exceptional strength and durability, impervious to weather conditions.

News in Brief

Built-in Refrigerators will, according to latest reports, no longer be part of council flats and houses in Great Britain. Cuts in steel allocations have forced manufacturers to write to councils saying that supplies will have to be cut off.

Wigan recently staged a 'Woman's Week,' sponsored by the *Lancashire Evening Post*. The programme of events at the Assembly Hall included cookery demonstrations, fashion and beauty talks, and the Gas Council film 'Method and Madness,' which was shown to afternoon and evening audiences daily.

The Development of an Engineer is the subject of an address by H. J. B. Harding to the Metropolitan Branch of the Engineers' Guild at a meeting at the Caxton Hall, Westminster, at 6.0 p.m. on May 8.

A Resolution criticising Government policy and calling for substantial wage increases for those employed in the chemical industry was carried unanimously at the quarterly meeting of the national executive council of the Chemical Workers' Union on April 20.

Sewage Sludge Gas at Glasgow.—Glasgow Corporation has been investigating the possibility of using sludge gas from the city sewage works for power purposes on similar lines to those practised at Birmingham. Laboratory scale tests at Shieldhall works have been encouraging.

A Fine of £50 was imposed at Bradford City Court, on Harold Chapman, gas meter inspector, Bradford, after pleading guilty to stealing £98, the property of the North Eastern Gas Board. It was stated that the offences were discovered when Chapman was away ill. He had said he had gone to the dog track once a week. Chapman had promised to pay the money at 10s. a week.

The Ministry of Works has drawn attention to an extra facility now provided by annual maintenance licences. Arrangements can be made for these licences to cover minor works of alteration consequent on the installation of new machinery and on the transfer of machinery from one factory to another, besides (as hitherto) on transfers in the same factory. Current licences will be amended on application to the Ministry's regional licensing officers.

The United Steel Companies, Ltd., have issued, as a report for employees, an illustrated review of progress in 1951. In a foreword the Chairman, Sir Walter Benton Jones, says that in spite of difficulties production has been kept at a high level, the works have been maintained in good order, more improvement and extension schemes have been finished, and a forward programme is continuing of which the most important feature is the enlargement of the pig iron capacity.

A Misunderstanding between two employees of the Kettering undertaking of the East Midlands Gas Board resulted in the undertaking being fined £1 with 10s. costs at Kettering. It was stated that each of them believed that the other had arranged for soil left in a Kettering street after excavations to find a leak in a pipe, to be removed. The result was that neither saw to it that the earth was taken off the road, and the undertaking was summoned for leaving it there.

Albert Sibley, coalman, of Kettering, was at Kettering Magistrates' Court, fined £1 for stealing fittings valued at 2s. 1d., the property of the Kettering undertaking of the East Midlands Gas Board, between January 30, 1950, and April 26, 1951, and a further 30s. for stealing approximately 1s. worth of gas from the undertaking between March 6 and March 8, 1952. It was alleged that Sibley added insult to injury by stealing the fittings to obtain free gas by by-passing his meter.

Accent on Colour

CONSIDERABLE discussion took place at the recent Gas Service Conference as to the various methods of approach regarding the presentation of cookery demonstrations to women's organisations. The discussions were mainly directed to the question whether it should be a plain and straight-forward cookery demonstration or a cookery demonstration-plus.

The Newcastle Division has long practised the presentation of the cookery case contained within the framework of allied subjects. The most recent contribution to this theme was carried out as a series of Spring fare events, combining exclusive and colourful dishes in a background with a talk embodying floral decor, table setting, and decorative room schemes. The cookery section of these activities was embraced in the title 'Food Fashions for 'Fifty-two' the highlights of which programme were, among other attractive dishes—Lamb Carbonade, Savoury Hungarian, and Spun-sugar Mousse.

In the showroom-alcove which is part of the demonstration theatre, carefully chosen furnishings were displayed, calculated to provoke admiration and comment on the colour schemes adopted. A selection of modern gas fires was shown harmonising with the varied colour schemes. The audiences for these special activities were carefully selected from the more exclusive types of women's organisations (afternoon tea clubs, inner wheel, and business and professional clubs), each member receiving a special personal invitation with the choice of attending afternoon or evening demonstrations.

The reaction of the audiences to this advanced type of presentation was outstandingly favourable and at the termination of each session the majority of the audience lingered behind to obtain further advice.

NEWPORT CHAMBER OF COMMERCE BANQUET

MR. J. F. RUST, M.INST.GAS E., M.INST.F., General Manager of the Newport undertaking and Chairman of the Newport group of undertakings, presided at the annual banquet of the Newport and Monmouthshire Chamber of Commerce at Newport, when over 200 were present.

Mr. Rust had as his chief guest the Right Hon. Sir David Maxwell Fyfe, Q.C., M.P., Home Secretary and Minister for Welsh Affairs. Other guests included the Lord Lieutenant of Monmouthshire (Lord Raglan), the High Sheriff of Monmouthshire (Mr. E. E. Cashmore), the Mayor of Newport (Alderman A. E. Pugh, J.P.), the Chairman of the Gas Council (Colonel H. C. Smith, C.B.E., J.P., D.L.), Mr. Peter Freeman, M.P., Mr. T. Mervyn Jones, M.A., LL.M., and Mr. R. S. Snelling, J.P., F.C.I.S., Chairman and Deputy Chairman of the Wales Gas Board.

The High Sheriff of Monmouthshire in proposing the toast of the town of Newport and the county of Monmouth, stated that in the development which has taken place in Newport in the establishment of new industries, they owed to Mr. T. Mervyn Jones, the former Town Clerk of Newport, a debt far greater than they could hope to pay.

The Mayor of Newport (Alderman A. E. Pugh) in responding, spoke of Newport's five essential industries and referred to the fact that gas was always able to meet the greatly increased demands.

The toast of Trade, Commerce, and Industry was given by Lord Raglan. Responding, Sir David Maxwell Fyfe stated it was his first visit to Newport since he became Minister for Welsh Affairs. No one would ever forget, with Mr. Rust in the chair, the importance of public utilities in Newport—all had shown the qualities of initiative, drive, enthusiasm, and wise independence which had brought the town and district to its present happy position.

In proposing the toast of the Newport and Monmouthshire Chamber of Commerce, Colonel H. C. Smith said how heartened he was to read the Chamber's report, because many of those present opposed nationalisation, but they had been nationalised and they now had to do their best to make a success of nationalisation, in the interests of the country.

Colonel Smith continued, 'Having visited many gasworks in England, Wales, and Scotland I must say that there are things we are now able to do which we could never do under private enterprise. We cannot improve the better gas undertakings, but we can improve the poorer ones. By and large the gas industry today is run by the same people as before nationalisation. You have in Newport, your President, Mr. Rust, the undertaking's General Manager and Engineer, and I am sure he is able to run it as was done before nationalisation. We in the gas industry realise we have a tremendous job imposed on us and we want to maintain constant contacts with all you gentlemen connected with the Newport Chamber of Commerce and give to the community the best possible service.'

Replying, the President, Mr. J. F. Rust, pointed out that although the Chamber had been in active service since 1884 it was a live body whose membership of 240 comprised a good cross section of the major undertakings and industries in Newport and Monmouthshire. As had been stressed by previous speakers, Newport had been well served by its public utility services and he thought those present would be interested to know that the Wales Gas Board—Newport undertaking, with which he had been associated for the past 47 yars, had been able satisfactorily to meet all demands for gas which had increased from an annual output of 280 mill. cu.ft. in 1938 to 1,890 mill. cu.ft. in 1951, or an increase of nearly 700%.

Front Row (*left to right*): *Colonel H. C. Smith*, C.B.E. (*Chairman of the Gas Council*); *Mr. E. E. Cashmore* (*High Sheriff of Monmouthshire*); *the Rt. Hon. Lord Raglan* (*Lord Lieutenant of Monmouthshire*); *Mr. J. F. Rust* (*President of the Newport and Monmouthshire Chamber of Commerce*); *Sir David Maxwell Fyfe*, Q.C., M.P. (*Home Secretary and Minister for Welsh Affairs*); *His Worship the Mayor of Newport, Alderman A. E. Pugh*, J.P.; *Mr. Peter Freeman*, M.P.

Back Row: *Mr. G. N. Pugh* (*Acting Secretary, Newport and Monmouthshire Chamber of Commerce*); *Mr. T. Mervyn Jones*, M.A. (*Chairman, Wales Gas Board*); *Mr. R. S. Snelling*, J.P. (*Deputy Chairman, Wales Gas Board*).

Knutsford Service Centre

AT Knutsford, Cheshire, the North Western Gas Board has opened a new gas service centre which must be unique in having no showroom windows.

Park House, King Street, the site of the centre, is a fine example of the pleasant Georgian dwelling-houses in which the town abounds. It is scheduled as an ancient monument, and when the Board purchased it for use as a service centre, it was decided that large glass windows would be out of keeping with the gracious period quality of the house and its surroundings.

New windows which had to be installed were copied faithfully from the existing ones and the careful treatment accorded to the building during the necessary alterations has been proved well worth while by the result.

At the official opening on April 2 Mr. Harry Butters, Member of the North Western Gas Board, welcomed the Chairman of the Knutsford Urban District Council, Councillor H. Darlington, J.P., and asked him to open the centre on behalf of the Board.

Knutsford forms part of the Board's Manchester group of undertakings.

An Ascot Reception

ASCOT Gas Water Heaters, Ltd., gave a reception at the Queen's Hotel, Leeds, on April 8, to introduce their balanced flue multipoint water heater. The large number of guests included architects, heating engineers, building inspectors, and a representative gathering of officials from surrounding local authorities and corporations. Also present were representatives from the North Eastern Gas Board, including Dr. R. S. Edwards, Chairman, and Mr. A. McDonald, Board Member. The North Western Gas Board was represented by Mr. J. W. Rodgers and Mr. T. Nicklin.

The Earl of Limerick, D.S.O., T.D., Chairman of Ascot Water Heaters, Ltd., welcomed the guests and the gathering was later addressed by Mr. R. A. H. Livett, City Architect and Housing Director, Leeds, and Dr. R. S. Edwards.

A model of the balanced flue heater was on show together with a range of component parts.

Dr. Edwards said Ascot had to be complimented on the creation of this new appliance, which was not only functionally efficient, but pleasant to look at. The gas industry owed a debt of gratitude to the company for the distinct advance in appliance design.

UNIVERSITY OF MICHIGAN LIBRARIES

Gas in the Catering Industry

IN the course of a talk to the Newquay Hotels Association, W. T. LANE, ASSOC.M.INST.GAS E., Publicity Officer, Southern Division, South Western Gas Board, remarked that the Hulton Research has provided some very interesting figures in relation to movement of the population during an average holiday period. It has been estimated that just over 19 mill. people spend holidays in Great Britain, and out of this quantity the largest number go to the South Eastern region because of its obvious proximity to the London area; second on the list is the South West region, where 3,840,000 people spend their holidays. Slightly under a third come from the South Eastern region and nearly two-thirds come from the South West, Midlands, and the North Western region collectively, the remainder coming from the North and Scotland.

Mr. Lane went on to say: As may be expected, the largest proportion, 31%, take their holidays in August; 29% in July; 17% in September; and 13% in June. The remainder amounts to less than 3% during the other months.

The proportion of holiday makers in August is divided among all classes, but in total figures the number of the lower income groups outweigh other income groups by two to one. In June, July, and September the same condition exists but with a swing towards the higher income groups in June and September as compared with the middle income groups.

During what is known as the high season, a very large percentage of holiday makers will probably be of a type that books accommodation in boarding houses and small hotels where such facilities are offered. We have, therefore, to consider gas appliances that will suit the occupiers of such houses to provide the extra facilities for cooking and hot water supplies during two months of the year, but which they would also have to use for their own purpose during the remainder of the year.

Reverting again to the Hulton Research figures, it would appear that the holiday making of people who accept accommodation in such houses is a figure somewhere in the vicinity of 1,600,000 people in the South Western region.

The number of catering establishments, from the boarding house and small hotel which I have mentioned to the largest hotel, decreases as the number of bedrooms increase. While, therefore, we may welcome, and in fact enjoy, the possibility of designing kitchens and ancillary departments for hotels of 100 or more bedrooms, the largest proportion of business must come from the smaller establishments.

We feel that the supply of any particular appliance is not the completion of our obligation. The sale of any gas appliance is only a means to an end and that end is the continued satisfactory use of the appliance by the consumer. It is important therefore that when such an appliance is installed it should be positioned to the greatest advantage. It is of little use having a large cooker in such a position that the user has not the necessary tabling facilities at which to prepare and complete the preparation of the cooked food. While, therefore, we do not wish in any way to be regarded as general factors in the supply of sundry equipment we would wish to offer our services in recommending and if necessary obtaining estimates for such items as tables, shelves, sinks, and other facilities.

In estimating for a kitchen installation it can be generally regarded that 5 sq. ft. per cover is desirable. Of this space not less than 10% should be used for preparation tabling. So far as the dining room is concerned, the figure varies considerably in relation to the type of establishment, but as a general rule 12 sq. ft. per cover is necessary.

If, therefore, you have under consideration any planning or improvements to your establishments, we shall be very happy to submit plans and recommendations to suit your requirements. It is a service which we offer and we should like the modest possible use made of it. The sale of catering appliances so far as the Board is concerned is the means to an end, and so long as these appliances are in use, so must we maintain an interest in them. To ensure that they give a continued satisfactory service the Board has in operation a maintenance scheme whereby such appliances are attended to at intervals without charge. It has not been possible to launch this scheme to the extent that we would wish, but it is hoped that in a relatively short time it will be in full operation in all units.

SMART WEST END SHOW

IN conjunction with a comprehensive display of modern gas appliances, a successful series of demonstrations has been staged recently by the North Thames Gas Board at Selfridges, the well-known West End departmental stores. The display stands were designed and installed by the Board's display section in co-operation with and following negotiations by Mr. G. L. Bayley, of the Board's Central Divisional Sales Staff. The attractiveness of the bright display has proved so effective that arrangements have been made for the display to remain in the stores indefinitely. Our photograph shows the demonstration theatre and central display.

Long Service with Falk's

On March 27 the Directors of Falk, Stadelmann & Co., Ltd., entertained at dinner eight employees who left the Company's service on March 31. The eight employees between them have a total service of 341 years, and in addition another employee was entertained to celebrate on that evening the completion of 50 years' service with the Company.

Among those entertained was Mr. E. Bailey, who has been with the Company for over 53 years. Mr. Bailey was engaged by the late Mr. S. Falk, the founder of the Company, at a time when gas was beginning to displace paraffin as a lighting and cooking medium. After the 1914-18 war, Mr. Bailey was appointed to the representative staff operating in London, and in 1942 he was appointed to an executive position in the incandescent mantle department. Mr. Bailey's brother, Mr. C. H. Bailey, retired after more than 60 years with Falk's. This family connection with a Company is certainly notable. Also present were Mr. A. P. Kelsey, Director of Stoves, Ltd.; Mr. W. H. Gillcox; and Mr. E. Hyett, the Company's West of England representative, who retired at the end of February.

British Flint and Cerium Manufacturers, Ltd., have moved from their temporary address at 1, Albemarle Street, London, W.1, to permanent and more commodious premises at 8, Spring Gardens, Trafalgar Square, London, S.W.1. (Tel.: Whitehall 1357; cable address, 'Ceride, London'; inland telegrams, 'Ceride Parl, London.' Code. Bentley's Second Phrase). These offices will be for the convenience of overseas clients and will deal exclusively with the export and sales side of the business. The firm's registered offices and works remain at Tonbridge, Kent.

NORTH OF ENGLAND INNOVATION

Members of the North of England Section with their wives and friends at the Spring Meeting held at Sunderland on April 4. Mr. W. O. Kirkwood, Chairman of the Section and General Manager of the Sunderland division, is in the centre.

A Tribute to the Ladies

A TRIBUTE to the part which the wives of gas engineers play in the industry was paid by Mr. W. O. Kirkwood, Chairman of the North of England Section of the Institution of Gas Engineers, when members and their wives and lady friends attended the Spring meeting of the Section at Sunderland on April 4.

Mr. Kirkwood described the occasion as unique because it was the first occasion in the history of the Section and the former North of England Gas Managers' Association that they had had the pleasure of entertaining wives and friends of members. He hoped it would become the forerunner of many such meetings in the years to come.

'It has been said on many occasions,' he continued, 'that the average gas official is married to the industry, but I would say that when a lady takes on the very onerous job of marrying such an official she also, in fact, is married to the industry. I have no hesitation in saying that the success of the gas industry in the Northern part of the country is due to the forbearance, patience, and tolerance of our wives which has helped indirectly in no small measure in ensuring the smooth working of the industry.' As an appreciation of their unfailing devotion to the industry, it is right and proper that they should be given the opportunity of attending this Spring meeting.

'During the past 15 years, including the last war and post-war period, conditions throughout the industry have not been easy for many of the senior gas officials as a result of the abnormally increased demand for gas. I consider it is my duty to record our sincere thanks to many of our wives for their co-operation during these difficult years in providing meals at most inconvenient times of the day, for disturbed rest due to urgent telephone messages and for sharing the hopes and fears of their husbands.

'I think there is full justification for saying that we as a technical body owe a great deal to our womenfolk and to thank them for the excellent indirect service they so graciously give to the gas industry.'

Mr. Kirkwood was speaking at a luncheon in the Seaburn Hotel, Sunderland, and his wife replied on behalf of the ladies. Afterwards, members visited the Hendon works of the Sunderland unit to inspect a 2½ mill. cu.ft. spiral-guided gasholder in course of construction, and the power house at the works. The gasholder, one of the largest in the area, will increase the capacity of the works from 3½ mill. cu.ft. to 6 mill. cu.ft. It is expected to be brought into use next winter.

During the afternoon the ladies visited the Luxdon Laundry, Sunderland, which is largely powered by gas and one of the most modern in the country. They saw the latest methods of handling procedure, automatic laundry machines, and finishing methods.

Opencast Mining

THE National Coal Board has taken over from the Ministry of Fuel and Power the responsibility for all opencast coalmining in Great Britain. Because of the present urgent demand for the greatest possible output of coal, the Board will continue to carry on opencast production at full pressure. The same regard as hitherto will be paid to the interests of agriculture and amenities.

The Ministry of Fuel and Power will, in law, be responsible for the requisitioning of land and for consulting with other interests when requisitioning is in prospect. The agricultural rehabilitation of land after the coal has been got will continue to be in the hands of the Ministry of Agriculture and the standard of restoration will remain as high as previously; the only change is that the cost will be borne by the Board instead of by the Exchequer.

The Board have established an Opencast Executive to which has been transferred the staff of the Ministry's Division of Opencast Coal Production.

Lectures on Parkinson Cookers

SIX technical lectures on two Parkinson gas cookers were given recently by Mr. Kenneth Hollingsworth, a sales and service instructor of the Parkinson Stove Company, Ltd., to more than 350 district staff members and fitters of the Watford Division of the Eastern Gas Board.

Based on the new Paragon cooker and the Renown Mark IV, the lectures took place at St. Albans, Hitchin, Luton and Watford. Mr. Hollingsworth gave a practical demonstration on the stripping-down of both cookers, covering the hot-plate, front enamel panels, top bars, plate-rack, taps and other essential parts. Questions were answered by Mr. Hollingsworth in the discussion that followed the demonstration.

The lectures were arranged by Mr. C. T. C. Woodall, London Manager of the Parkinson company, with the co-operation of Mr. J. L. Wilson, Service Engineer of the Watford Division.

Gas Coal Stocks

STATISTICS issued by the Ministry of Fuel and Power on April 9 showed that gas coal stocks at the end of the first quarter of 1952 amounted to 2.28 mill. tons, equivalent to 3.5 winter weeks consumption, compared with only 1.65 mill. tons, or 2.7 winter weeks consumption for the corresponding period of 1951. Total gas available at gasworks was shown as 166,795 mill. cu.ft., against 163,691 mill. cu.ft. for the first quarter of last year. Coal consumption at gasworks for the quarter was 8.07 mill. tons, against 7.86 mill. tons for the first 13 weeks last year.

Coal exports for the first quarter of 1952 reached a total of 2.28 mill. tons, compared with 1.34 mill. tons for the same period of 1951. Imports for the first 14 weeks totalled only 318,000 tons, against 826,000 tons.

A total output of 4.73 mill. tons of saleable coal for the week ended April 5 brought the aggregate for the first 14 weeks up to 63.24 mill. tons, compared with 60.77 mill. tons in 1951.

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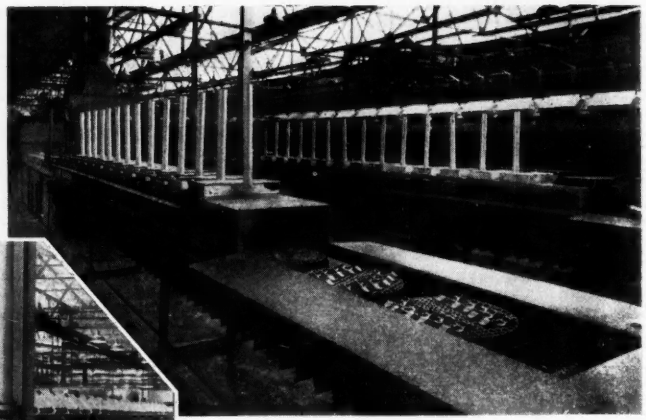
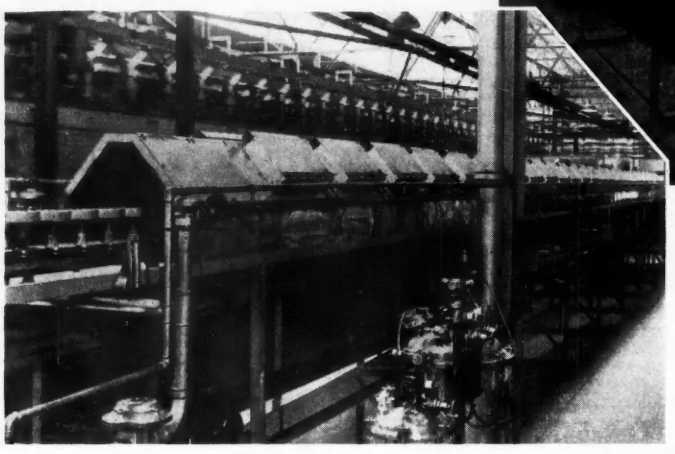
INFRA-RED TUNNELS FOR ALARM CLOCKS

TWO infra-red drying tunnels by De La Rue have been installed at the new alarm clock works of S. Smith and Sons (England), Ltd., at Wishaw, for high-speed drying of painted clock parts. The No. 1 unit (shown in the lower photograph) is an oven 60 ft. in length incorporating 52 vertical type gas-fitted panels erected over a conveyor belt and is used for drying clock cases. Parallel to the oven is a flash-off tunnel of similar length through which the clock cases pass before they are transferred to the drying tunnel. Belt speeds are approximately 13 ft. per minute, giving five minutes flash-off and five minutes stoving time. The clock cases are sprayed in an automatic spray plant.





The No. 2 unit (shown in the upper photograph) is in twin form constructed each side of a double back water wash spray unit, and each oven consists of 14 horizontal type panels. Each conveyor is in three sections, the first section being of turntables at 20 in. centres, which pass through the spray booth. A transfer conveyor, situated in the flash-off zone, lifts trays from the turntables and passes them to the final conveyor through the oven. The transfer type conveyor is used in order that excess paint reaching the turntables is not passed through the stoving oven where it would harden and add maintenance difficulties. The twin plant is capable of handling all painted components to keep pace with the production of cases on the No. 1 unit. The water wash spray booths for both plants were supplied by Air Industrial Developments, Ltd.

Company News

METROPOLITAN GAS METERS

Dividend 15% (same), year to September 30. Group profit £6,971 (£6,636), after tax of £14,950 (£10,915).

ECONOMIC GAS BOILER

Net profit for the year 1951 was £6,809 (£4,739) after tax of £11,500 (£6,000). Dividend on the ordinary shares 20% (same); forward £6,366 (£6,111). The 2s. shares are quoted at around 3s. to give a yield of about 12%.

HORSELEY BRIDGE

Shareholders of Horseley Bridge and Thomas Piggott, Ltd., have agreed to the Board's proposal to increase the authorised capital from £360,000 to £810,000 by the creation of 900,000 new ordinary shares of 10s. each. Of these new ordinary shares 140,000 will be issued to the holders of 420,000 ordinary shares of Carter-Horseley (Engineers) in exchange for their shares in Carter-Horseley, and Horseley Bridge and Thomas Piggott, which already owns 180,000 ordinary shares, will now own all the ordinary shares of Carter-Horseley (Engineers). Permission to deal in the new shares has been granted and they will rank for all dividends hereafter declared.

POWERS SAMAS

Group trading profit, £1,047,875 (£1,040,401); net profit, after tax, £308,034 (£361,437); final 13¾% on capital doubled by scrip bonus; interest of 17½% was paid on old capital (last year, total of 45%); reserve, £180,000 (£225,000); forward, £130,092 (£124,908). (Controlled by Vickers.)

DONALD MACPHERSON

The directors of Donald Macpherson & Co., Ltd., propose increasing the authorised capital to £500,000 and the issued capital to £300,000. Since the balance sheet date, October 31, 1951, the issued capital has been raised from £119,798 to a round figure of £120,000, the new 2s. ordinary being taken up by the directors at the then current market price of 13s. 4½d. per share. Application has been made to the C.I.C. to capitalise £180,000 of reserve on a three-for-two basis. It is also proposed to raise the company's borrowing powers to £450,000.

Current assets stand at £838,213 (£870,078), including stock £585,741 (£274,843) and cash £216 (£162,710). Current liabilities and provisions £619,722 (£500,161), including bank overdraft £182,147 (nil). Mr. R. P. Chester is Chairman.

PARKINSON & COWAN

Ordinary dividend 7% and bonus 2% (same). Consolidated gross trading profit, 1951, £524,054 (£379,748). Group profit, after all charges, including £218,000 (£130,310) tax, £147,014 (£122,741).

BRITISH OXYGEN

After their spectacular advance in 1950 from £3,264,000 to £4,226,000 group trading profits of British Oxygen increased again last year, but by only £370,000 to £4,595,000. Rising costs will have pressed more heavily on profit margins than they did in 1950. By reason of higher depreciation and tax charges, the net figure available to the parent company is left little changed at £1,146,000, against £1,098,000.

Profit retentions total £645,000, indicating that the Board is determined to finance as much as possible of the group's development and expansion from its own resources. Stockholders receive their customary 20% which, costing £437,000 net, is a conservative distribution. At 71s. 6d. cum the final of 12% the Company's £1 ordinary units yield about 5¾%.

(*Continued on opposite page*)

IN PARLIAMENT

Control of Nationalised Industries

ALTHOUGH the observations at Question Time in the House on April 9 related more specifically to the Transport Industry, one wonders whether the urge for closer Government control portends the shape of things to come in the other nationalised industries. There is clearly a growing weight of opinion, stimulated in no small measure by the public outcry against the new rail fares, that for the State to own industries over which it has little or no control leaves something to be desired.

The supplementary questions which followed were all related in the main to road transport until the redoubtable Mrs. E. M. BRADDOCK (Liverpool, Exchange) switched from the particular to the general with a horrifying picture of sabotage in the nationalised industries by people who desired to bring them into disrepute. The PRIME MINISTER promptly denied that there was any foundation for such an assumption, but commented, on the other hand, that the Government 'encountered a lot of difficulties in clearing up the mess which was made in regard to these industries.'

In the end the subject threatened to develop into a debate—and Mr. SPEAKER called for the next question.

SABOTAGE IN THE NATIONALISED INDUSTRIES

As Mrs. E. M. Braddock sees it?

The comments in the Commons arose from a question by Mr. J. GRIMOND (Orkney and Shetland)—whose constituents, it might well be thought, suffer less from increased rail fares than most others—who asked the Prime Minister what progress had been made in his investigations into nationalised industries.

The PRIME MINISTER replied that it was only gradually that the full results of the policy of nationalisation became apparent. After reference to the severe increases in London Transport fares which had taken place under the authority of a judicial body over which

COMPANY NEWS — Continued

MAVOR & COULSON

Consolidated trading profit for 1951 £408,784 (£380,287), less depreciation £47,991 (£40,340), taxation £203,000 (£183,820), etc., net profit £155,151 (£153,445). Add unrequired tax provision £1,264 (£49,682), less minority interests £6,181 (£7,092). To general reserves £119,615 (£147,214), dividends already announced, £24,575 (£24,837), forward £73,792 (£67,748).

BELL'S ASBESTOS

The Directors of Bell's Asbestos and Engineering, Ltd., are recommending payment of a final dividend of 25% actual, less income tax, making with the interim dividend of 15% already paid, a total distribution of 40% for the year (compared with 35% last year). Group net profit before taxation, £469,219 (£221,859); after taxation, £178,983 (£91,384); group carry forward, £153,861 (£119,839).

Silver Medal Awards

THE Council of the Society of British Gas Industries has again this year awarded Silver Medals to the Junior Gas Associations for the best paper adjudged to have been presented during the year by their members at a general meeting.

Twenty-four papers were submitted by nine Junior Gas Associations for adjudication. A list of the awards follows:

London and Southern: Dr. F. J. Eaton for paper 'The Rating of Domestic Solid Fuel Appliances.'

Manchester and District: M. Redman for paper 'Ancillary Plant Capacity.'

Midland: D. J. Ward for paper 'Use of Producer Gas as a Diluent for Peak Load Conditions.'

Eastern: R. F. Robinson for paper 'Some Aspects of the Design and Construction of Gasworks.'

Western: R. W. N. Cameron for paper 'Coke Quality.'

Scottish (Eastern District): T. R. Cameron for paper 'A History of Gas Manufacture in Edinburgh.'

Scottish (Western District): R. A. Currie for paper 'Methods of Construction and Maintenance in Group Undertakings.'

Northern: D. P. Dalby for paper 'The Inspection and Care of Gasholders.'

Yorkshire: F. S. Charnley for paper 'Aspects of Distribution Control as Applied to Interlinked Undertakings.'

Industrial Safety Conference

THE National Industrial Safety Conference, organised by the Industrial Safety Division of the Royal Society for the Prevention of Accidents, will be held at Scarborough from May 16 to 18. This will be the sixth occasion in succession that the Conference has been held in Scarborough.

The trade exhibition of industrial safety appliances which, since its inception three years ago, has become a popular feature of these annual gatherings of industrial safety experts has been redesigned on more elaborate grounds. This year it will be expanded to occupy space in both the Royal and the Grand Hotels. This will ensure that delegates will be able to visit the exhibition in greater comfort, at the same time maintaining that quality which has been praised by delegates in the past—namely, the ability to visit the exhibition at leisure within the hotels where they are staying.

Evidence of the importance attached to these Conferences on industrial safety can be obtained from the ever increasing number of those attending each year. Delegates will be welcomed by the Mayor of Scarborough, Councillor J. W. Hardcastle, and the Conference will be opened by Lord Llewellin, President of the Society.

UNIVERSITY OF MICHIGAN LIBRARIES

CONSULTATIVE COUNCILS

New Tariffs for South Western Area

Mr. C. H. Chester Deplores Irresponsible Criticisms

THE South Western Gas Consultative Council at Taunton on April 9 unanimously accepted new tariffs announced by Mr. C. H. Chester (Chairman of the South Western Gas Board) to take effect in June. He said the average increase in price throughout the area would be 0.84d. per therm, but the present maximum of 2s. a therm would be maintained. Through greater uniformity some consumers would pay less and some more than the average increase. Mr. A. W. Loveys (Chairman) presided.

Mr. Chester said the Board's third financial year had just ended and there was no doubt that the results would show another year's steady progress in the right direction. The effects of re-armament and the need for strict national economy were beginning to affect their long term plans very materially but, on the whole, things were going well and tremendous progress had been made since vesting date.

Killing Initiative

'A small minority of irresponsible people, for reasons best known to themselves, seem determined to raise all sorts of difficulties on every conceivable occasion,' continued Mr. Chester. 'While the Board welcomes well-informed, constructive criticism and is most sensitive to consumers' interests, I wish some of the people I am referring to would try to give the Board some little credit for what it is doing. We realise that, however much we try, we cannot please everyone, particularly in these difficult times, but it would be a good thing if some of these people would remember that most of their complaints and criticisms, however ill-founded, are carefully gone into by senior members of the Board's staff, who have to spend a great deal of time answering them. It costs a lot of time and money which could be much more profitably employed.

When it is realised that some of these critics are quite determined not to agree, no matter how convincing the answer is, it is very distracting and discouraging to the staff. To my personal knowledge of over 30 years in the gas industry this sort of thing is tending to kill the spirit and initiative of a large number of officers who have given excellent service in the industry for many years prior to nationalisation and are still endeavouring to do so. It would be a tragedy if the splendid spirit which has always been a feature of the gas industry was in any way impaired, to the detriment of consumers' interests.'

Coal Price Structure

The new coal price structure was purported by the National Coal Board to be another instalment of its rational price structure whereby pit-head prices would be fixed according to the quality of the coal as determined by scientific analyses and commercial knowledge. That might sound quite logical, but it must be understood that in evaluating for quality, special provision was made for the purpose for which the coal was used.

The result of such an assessment was, in his view, not only contrary to the requirements of Section I of the Coal Industry Nationalisation Act, 1946, which called on the National Coal Board to 'avoid any undue or unreasonable preference or advantage,' but also contrary to the most vital need to conserve the national fuel resources.

Another aspect of the re-evaluation of coal was that one would assume that if the price was based on quality, the increase on the poorer quality coals would be less than on the best gas coals; this had, in fact, been stated as the case. However, with the close proximity of the Somerset coalfield to several of the works in the area, it had been their practice to utilise large tonnages of that coal, in spite of the fact that it could not in any circumstances be considered a good gas-making coal. For that reason it was fair to assume that the increase would have been one of the lowest, but it was, in fact, one of the highest, averaging 8s. 5d. per ton, whereas the best Yorkshire gas coals had increased by an average of only 6s. 0½d.

Financial Position

Mr. Chester went on to say that when he submitted tariffs a year ago, he promised if possible not to alter them until they had run for 12 months. This he had done, but, in addition to the steep rise in costs, they had not achieved that increase in output of gas that they had hoped for, owing to the mild winter. As a result, their estimates of the actual outcome of the year to March 31, 1952, indicated that the surplus would not be sufficient completely to write off the balance (£285,000) of the deficiency incurred in the initial period of the Board's operations.

In preparing the new tariffs they had taken into account the effect of all known increases in costs up to March 31, 1952, and had set against these increased costs every penny of increased revenue and saving in expenditure that could possibly be achieved. There was nothing provided for contingencies or reserves, though normal prudence and their experience in the past had shown the great need for such provisions.

His reasons for taking this apparently optimistic and unusual course were two-fold: (i) He believed that at the present time any undue increase in the price of gas would have a bad effect on sales and so do more harm than good to the Board's financial position; (ii) to increase tariffs in advance of increased costs would only help to precipitate further increases in costs generally and to speed the inflationary spiral.

He was not able this year to hold out any real hope, as he did last year, that the Board would be able to carry any further serious increases in costs in the next 12 months. They would do their best, but they had nothing in hand and they had about come to the end of the quick savings to be made from improved technical efficiency and organisation. Further large savings would occur, but only as major plans for the modernisation and extension of large works were completed and the small inefficient works were closed down. This would take time, money, and particularly steel, and would depend on the priority given to the gas industry in the national economy.

Eliminating Anomalies

The new tariffs were intended to meet increased costs and at the same time to eliminate any anomalies or inequalities which were found by experience to exist in the present tariffs.

Having looked carefully with the aid of the Consultative Council's local committees at the conditions for the manufacture and distribution of gas in the various parts of the area, and having considered the need to promote the sales of gas to all classes of consumers the Board had reduced the number of price areas from six to five in the case of domestic consumers, and from 11 to five in the case of non-domestic consumers. The same price areas now applied to both classes of consumers. The price blocks to both classes of consumers had been somewhat altered in the earlier stages.

The maximum price of 2s. per therm in any part of the area had been maintained, but it might not be possible to maintain this maximum if the prices of the Board's prime materials and labour continued to rise. The special two-part optional tariff has been continued, and its scope slightly widened, as it was considered desirable to continue to meet the special circumstances of certain types of non-domestic consumers. Except in a few isolated places, the lowest price charged in any price area was only slightly above the cost of production and supply of gas in that district.

Some People Pay Less

On the average, these new tariffs would increase the price of gas throughout the area by 0.84d. per therm, but as a result of the greater uniformity and simplicity of the new tariff structure a number of the Board's consumers would pay less and a number would pay more than the average increase in price. The price areas were now set out under counties and local government boundaries. By the time the tariffs came into force, the whole area would be supplied with gas of a declared calorific value, which was

another decided benefit to the consumer—and there was, therefore, no need to publish tariffs based on anything other than therms.

Mr. H. T. Bush (Cheltenham) said the increased tariffs were forced on the Board by circumstances beyond their control.

Mrs. B. J. Shell (Melksham) said her district was rather hard hit by the last increase, but now they were grateful for a slight reduction.

Mr. L. G. Northcroft (Cheltenham), referring to Mr. Chester's statement that the cost of coal to the South Western Board was the highest in the country, said a national fuel policy was necessary.

Mr. H. Morland (Glastonbury) said if trade continued on the present trend, there would be a reduced consumption of gas instead of the increase hoped for.

Mr. Chester, replying to criticisms of the standardised meter rentals, said the Board's total income from rentals would be the same as at vesting day.

When the Board's official publicity was being discussed, Mrs. Shell said it should be of the type that the ordinary woman could understand. 'We do not want it polished, with a lot of big words,' she added.

The Grey Edition of Communication No. 383/180, 'The Development of Gas Production in Belgium,' by Marcel Brabant, has been published by the Institution of Gas Engineers and is obtainable at 2s. 6d. per copy, post free.

Scottish Housewives' Preference

THE practice of electricity boards of installing electricity in 'all-electric' houses at a lower cost than those in which gas was also installed was criticised at a meeting at Edinburgh of the Scottish Gas Consultative Committee on April 9. Mr. A. T. Morrison, Aberdeen, who presided, said that the council had communicated with town clerks and county clerks concerning the terms which were being asked for the installation of electricity in their housing schemes. In all, 186 letters were sent out, and 78 replies had so far been received. In south west Scotland, the terms were practically the same all over—£15 if gas was to be installed and £3 for an all-electric house. The South East Scotland Electricity Board had recently fixed its scale, and he understood that it was charging £10 if the supply was made by underground service connection and £5 in the case of an overhead connection. No reduction had been quoted if the house was to be all-electric.

Electricity Terms 'Not Fair'

In the Hydro-Electric Board's area conditions varied very considerably. Mr. Morrison said that they were sending these particulars to the Scottish Gas Board and to the Minister of Fuel and Power because, obviously, they were not fair, and the electricity boards were not carrying out the principle recommended by the Minister that tenants should have a free choice between gas and electricity. He thought they should suggest to the Minister that a reasonable line to take would be the arrangement between the Hydro-Electric Board and the Corporation of Aberdeen, where the latter paid a flat rate of £5 per house and thereafter the tenants had a free choice of gas or electricity. This arrangement had been working well. There was no doubt, he said, that in the great majority of cases the tenants wanted to use gas for cooking and boiler heating. Latest figures for Aberdeen showed that where tenants had a free choice 483 chose gas and 48 electricity.

It was agreed that the Scottish Gas Board be asked to confer with the three electricity boards to try to get a similar scheme for the whole of Scotland.

Consideration was given by the Council to the question of a standard charge for gas, and it was agreed that returns should be secured from the various undertakings before the matter was discussed fully. Mr. Morrison said it had not been the policy of the Gas Board to make a standard charge throughout Scotland. The aim had been to keep the cost to that at the local production unit, except where that was exceptionally high. It would be a difficult position if they were to try to get a standard charge throughout undertakings in Scotland, where the cost of production varied so much.

'FOSTERING INDUSTRIAL INEFFICIENCY'

IN responding to the toast of 'The Chartered Institute of Secretaries' at the annual dinner of the Sheffield and District Branch, Mr. J. R. W. Alexander, President of the Institute, spoke of the probable effects of the Budget on industry.

He said that while they could be grateful that the Chancellor had courageously and hopefully endeavoured to avoid merely partisan proposals—basing his measures upon a constructive fiscal philosophy—it was to be regretted that he regarded it as sufficient in effect to limit incentives to productive workers.

'Industrial inefficiency and extravagance will be fostered,' continued Mr. Alexander, 'and the capital re-equipment of industry will be impeded by the nature of the proposed increase in the taxation of industry, trade, and commerce.'

In this respect, at least, the Finance Bill demanded material amendment during the Committee Stage in Parliament, although it was the fact that the measure was much more flexible than was the 1951 Finance Act, which was based upon grievous estimating errors not capable of correction during the fiscal year.

It was to be hoped that the organisations representing industry, trade, and commerce would be able to convince the Chancellor that it was seriously detrimental to the expansion of business—and grossly inequitable—not to have more realistic and effective alternative standards to the base years and to disregard the merits—indeed the justice—of including accumulated revenue and capital reserves (other than share premiums) in the computation of standard profits based on capital. If such amendments were not made, a vicious principle would have been written into the Act and, in particular, old established companies might suffer severe hardship. Many would have done relatively badly during the base years, which were often a period of reconstruction following war effort. Even administrative convenience should not necessitate that.

The Finance Bill perpetrated another injustice by imposing 'double taxation' on dividends received by investment trusts from companies which had already been subject to the excess profits levy. Such 'franked income' should be exempt from the levy. By providing otherwise the Finance Bill departed from the precedents set in certain conventions with foreign countries and from the Budget White Paper, which stated that assessments to excess profits levy would be 'computed in the same way as they were computed for profits tax purposes.'

If the Bill, when it ultimately emerged as an Act, led to a substantial increase in individual and collective output, chartered secretaries and other professional men and women with marginal incomes might feel disposed to overlook the fact that the Chancellor had not treated them as being in need of incentives. Such treatment might be complimentary to them, but it might be due to its not being recognised that the executive, managerial, and professional classes did at least as much as any other group to increase production, which was the key to the extraction of the country from its sorry predicament.

'Home Cooking, the Flavel Way' has been produced with one object in mind—namely, service to the gas industry and the consumer. It has no fewer than 438 well tried recipes and is lavishly illustrated with eight pages in full colour and 23 pages in black and white. The food shown in the photographs was cooked in the Flavel 68 cooker by their own home service organisation. Other pictures will be most useful to the housewife in describing some of the more difficult operations. Another interesting feature is the permanent cover which has been treated by a special process which enables it to be wiped over with a damp cloth to keep it fresh and clean at all times. In spite of high production costs it has been decided to offer the book to the industry at a net cost of 6s. per copy, and supplies can be obtained upon application to Sidney Flavel & Co., Ltd., Eagle Foundry, Leamington Spa.

WATER GAS TAR EMULSIONS

By R. O. BAMBROUGH,
Technical Assistant, Tingley, North Eastern Gas Board.

Paper to the Yorkshire Junior Gas Association.

DURING 1949 and 1950 the carburetted water gas plant at Meadow Lane, Leeds, produced the following:—

1949:
Tar, 500 tons.
Puddle, 561 tons.
Puddle per 1,000 cu.ft. gas made, 1.27 lb.

1950:
Tar, 661 tons.
Puddle, 825 tons.
Puddle per 1,000 cu.ft. gas made, 1.54 lb.

The average water content of puddle as determined by the Dean and Stark apparatus was equal to 20%. Thus the loss of saleable tar represented by the volume of puddle over the two-year period was 1,060 tons, which at 6d. per gal. represents a cash loss of £5,650.

Under the present agreement with the Yorkshire Tar Distillers, water present in the tar is not deducted from the weight of tar purchased unless it exceeds 4%. The problem thus resolves itself into reducing the water content of the tar to less than 4%.

Causes of Emulsion Formation

(*a*) *Internal*

Operation of the superheater on the C.W.G. plant at temperatures below 1,550°F. At this temperature there is a very great danger of the firebrick running. It is, therefore, normal practice to operate the superheater at temperatures between 1,500°-1,520°F. This decrease of operating temperature causes an increase of tar produced per 1,000 cu.ft. of gas made, above that which would be produced if the superheater were operated at the higher temperature.

(*b*) *External*

(i) Condensation in atmospheric condensers.
(ii) Action of P and A tar extractors.
(iii) Action of electrostatic tar precipitator.

Of these three causes, (i) and (iii) form the bulk of the emulsion. The amount of emulsion formed in the P and A tar extractor is negligible; the majority separates out on standing.

As the two main sources of formation differ completely, we might expect the emulsions to be quite distinct. In practice this is proved by separate sampling and examination. Of the two types of emulsions formed, the water in oil emulsion is formed in the atmospheric condensers, and the oil in water in the electrostatic tar precipitator. The relative amounts of oil in water to water in oil is not constant; it appears to depend on the amount of tar fog removed from the gas stream by methods (i) and (iii).

The causes of emulsion formations can be eliminated in the condenser by reducing the amount of the water vapour present in the gas stream at the inlet to the condensers; in the detarrer (*a*) by the reduction of the amount of water vapour there present and of the temperature of the gas stream by increased condenser efficiency, and (*b*) by operation of the detarrer at a temperature above that of the inlet gas stream and hence above the temperature at which saturation with water vapour and consequent condensation would occur.

The methods of dispersion are four-fold: Mechanical; addition of salting-out agents; addition of electrolytes; addition of surface-active agents.

Of these a breeze filter bed is in use at the New Wortley plant and for a short while after charging it works fairly efficiently. However, the breeze rapidly becomes coated with tar and hence inactivated and the efficiency of the arrangement rapidly declines. The addition of salting-out agents was discarded due to the amount of reagent required and contamination of the tar, and the addition of electrolytes was discarded for similar reasons. Addition of surface-active agents was adopted for experiment.

A surface-active agent should have a short hydrocarbon chain to diminish its detergent properties and slight anionic activity when in solution. This would partially achieve the effects of using an electrolyte. After consultation with Dr. N. Geller it was decided that 'Nervan N' might answer these requirements. A sample was accordingly obtained for experiment.

The experimental results have shown that a final concentration of 0.05% of 'Nervan N' in the water phase of the emulsion was most effective for dispersing the water-oil emulsion. At this concentration the equilibrium emulsion $\rightleftharpoons$ water + tar was shifted considerably to the right, and the tendency of the water and tar to re-form an emulsion was minimised.

The action of the 'Nervan N' in reducing the interfacial tension between the particles of water and tar results in the tar particles falling out of the emulsion. The specific gravity of the tar under consideration varied between 1.4 and 1.6. Unfortunately the reduction of the surface tension of the water phase of the emulsion by the action of the 'Nervan N' results in an increase in the amount of oil in water emulsion. It is my opinion that the oil-water emulsion is formed as a result of the electrostatic charge imparted to the tar particles by the electrostatic detarrer. Hence the electro kinetic potential rises above the limiting value of 0.03 volts and leads to the formation of an exceptionally stable emulsion of the oil-water type.

Prevention Easier than Dispersal

The prevention of emulsion formation is theoretically easier than the dispersal of the emulsion after it has been formed. With the present limitation on capital expenditure and the increasing demand for gas, this is not always a practical proposition. Some form of emulsion treatment thus becomes necessary.

An effective method of such treatment would be to pump the emulsion from the main tar cellar into a settling cellar, 'slug feeding' with the required solution during the pumping, thus ensuring the thorough mixing of the wetting agent and the emulsion. Storage tanks to hold several weeks' supply of the concentrated wetting agent could be fixed to a pump of the 'Candy' type. The amount of wetting agent necessary could be calculated from previous sampling of the emulsion layer in the main tar cellar and the pump adjusted accordingly. The cost of such a system (approximately 1s. per ton of emulsion treated neglecting capital charges) is very small compared with the resulting financial return. As the oil-water emulsion is the more stable of the two, it would appear evident that if the formation of this type of emulsion can be reduced to a minimum, water-oil emulsion can be broken down successfully and a saleable tar with a low water content produced.

In my opinion the oil-water emulsion is formed mainly when the electrostatic detarrer is working on overload, since it is impossible for all the charged particles to discharge themselves within the detarrer due to the velocity of the gas stream. Experiments have shown the amount of oil-water emulsion

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PROSPECTS OF THE JUNIORS

BY J. T. HAYNES,

Junior Vice-President, Institution of Gas Engineers.

An address at a joint meeting of Eastern and Western Districts of the Scottish Junior Gas Association.

I WILL restrict my talk to a retrospect of those experiences through which I have passed as a junior, comparing them with those which the present-day junior is likely to experience under nationalisation, and try to point a way for the juniors of the future.

I started in the days of the premium pupil and articled apprentice. One of an engineer's perquisites used to be the 100 guineas or so which he received for taking a pupil and accepting a personal responsibility for his training, with an obligation to put the young man firmly on the ladder of success. Most of our leaders in the industry today think with gratitude of the honourable way in which our predecessors fulfilled their obligations, and there is no denying that the pupil developed a sense of loyalty to his chief and to the industry at large which cumulatively has made the gas industry the envy of all others.

The day of the premium pupil has gone. A few undertakings still select and appoint young university graduates and put them through an intensive course of training in various branches of the industry as they did under private enterprise. In general, however, there continues the rather haphazard practice of recent years of engaging young men as workshop apprentices or laboratory assistants in the hope that some of them will show sufficient ability or inclination to study to warrant their transfer to other departments in order to qualify them as technical assistants. It seems to me that there is a danger of these trainees becoming mere punched cards in a filing cabinet of the personnel officer. Admittedly the old method of premium pupils produced what I will call general practitioners and was not calculated to produce the range of specialists which scientific development in all branches of the industry now requires. On the other hand there is now a cramming for examinations which takes up a great deal of a student's time—time which in former days was spent in gaining practical experience. In this matter Scottish education practice, traditionally so far in advance of the rest of the country, may be able to assist in preserving a proper balance between theory and practice.

Thrilling Days

At the end of his apprenticeship the young man became a technical assistant and began to scan the advertisement columns of the technical journals. And Oh! the thrills of those days —the chance of a new experience, of a few extra shillings per week, of the possibility of joining the staff of an undertaking under a renowned chief, of experience on a bigger works, of a higher status, or even of a more salubrious part of the country to live in. I recall the nerve-racking experience of the short-list interview, and the elimination of the unfit. There was a lot of luck about it all. On one occasion when I was short-listed I asked an old friend for some advice. I pass it on to the younger men today. He said: 'There are four men being interviewed today; will you please tell the committee why you think you should be selected. What would you say?'

Nowadays, when there is a vacancy on the staff of an area board there is a more or less standard method for making an appointment, largely agreed with the appropriate trade unions. The vacancy is first privately advertised within the area—one can almost picture a personnel officer sticking his rod into the pack of record cards—and after soundings in two or three directions, a young man is promoted. If a wider field is to be tapped, there is an advertisement in the Technical Press, followed by courtesy requests to area board chairmen to permit certain members of their staffs to be interviewed. I cannot think that there is quite as much exhilaration for the candidate today as that which we experienced.

During this period of his existence the young man attended meetings of his junior gas association where he was encouraged to take part in the discussion of papers prepared and submitted by his colleagues. Pride in the methods and practices of his own undertaking, loyalty to his chief, the bursting enthusiasm of new ideas, marked every meeting, and there was never a thought of encroaching on the preserves of one's employers. There was a freedom of speech which by many accounts is less noticeable now. There are even reports that some men are afraid to say what they think for fear of committing their seniors. I have sensed it myself at meetings which I have attended, and I hate to think of the gas industry developing into a number of groups of paid automatons.

Loyalty Coupled with Pride

And then when the junior became a senior! Some of you can remember the thrill of crossing the gulf between chief and assistant. At last he was an engineer and manager. Whether the undertaking was a large one, a medium one, or a small one, he had an independent command. His loyalty to the industry became coupled with a pride in his own undertaking with all its local considerations. Many are the records of individual successes. Some engineers made errors; yes, but these they had to account for and to rectify themselves. There was often a short-sighted resistance to integration based on local prejudices and even on personal selfishness. As I see it the compound of outstanding successes and of self-satisfied apathy over many years gradually led to the demand for some over-riding authority to co-ordinate the efforts of the industry as a whole. Well, we have got that over-riding authority—but it was a happy life in the old days.

Have my remarks so far suggested a nostalgia for the days that are gone? Perhaps they have for the older men, but I see many bright days ahead for the younger ones. We are at present living in the transition period between private enterprise and nationalisation, and it is traditionally difficult for the leopard to change his spots. But what about the youngster who has not yet achieved any spots? There are some among us who are sufficiently resilient and adaptable to fit into the new way of doing things and can even play parts in forming the shape of things to come. It is one of our responsibilities to see that the rising generation which 'knew not Joseph' is given the opportunity and the guidance necessary to enable it to carry on this great industry under the new regime when we relax and invest our successors in office.

The Gas Council has this matter very much in mind and has already prepared a general scheme for the education of newcomers into the industry and has recommended a range of conditions under which students shall be granted facilities for study. The Council has made generous use of the Education Scheme of the Institution of Gas Engineers and has referred the general scheme to the area boards in order that more detailed proposals may be drafted to suit local conditions.

The place of the junior under nationalisation has been expounded by a number of our leaders in the industry during recent years, but I make no apology for mentioning the subject again because, as the plan of nationalisation gradually unfolds, we see more and more clearly the parts we have to play.

The suggestions and views I am now expressing are not to be construed as in any way committing either the Institution of Gas Engineers or any of the area boards (and particularly the board which I serve), charged as they are by Act

of Parliament with the responsibility for education and training within the Industry.

Each area board requires the services of expert advisers, specialists in the various branches of the industry, civil engineers, chemists and scientists, production and distribution engineers, accountants, sales managers, industrial relations officers, and so on—and the board also relies on executive officers at division and group levels well grounded in the practical application of plans recommended by the specialists. These executive officers are the general practitioners of the industry. The industry must, broadly speaking, therefore make provision for the supply of men to fill the following senior positions:—

(a) Specialists at area level.
(b) Managers and technicians at division level.
(c) Managers at group level.

For this purpose I suggest that articled pupils should be selected from young men of General School Certificate standard and should be given two years' practical training in the various departments of a large gas undertaking in order to give them a thorough background of the industry, regardless of the department in which they may finally wish to progress. During this period the divisional or group manager, who should be held personally responsible for the pupils committed to his charge, will be able to form some opinion of each pupil's ability, personality, and inclination for some particular branch—*e.g.*, engineering, chemistry, accountancy, etc.

Education During National Service

At the end of the two years the pupil will be liable for his national service and he should be encouraged to serve and to take full advantage of the educational facilities available to national service men. The board might well assist in the provision of appropriate text-books. During this period the young man will learn to 'stand on his own feet,' he will broaden his outlook, and he will be confirmed or otherwise in his decision to make his career in the gas industry. On his return from national service the pupil should have (say) a six months refresher course in the industry in order that the manager may have the opportunity of making up his mind as to the possibilities of the pupil. Students of 18 years of age from grammar schools would be accepted after their national service, and in view of their higher education the six months intensive training in the gas undertaking before going to the university would be sufficient.

(a) In the case of a pupil who it is considered should be trained for positions at area level, it is suggested that the board should be prepared to consider sending him to a university or other training centre for three years in order that he may obtain the specialist and academic knowledge which is only available outside the industry.

(b) The pupil who is to be trained for appointments at divisional level should be encouraged to undertake during his practical training the normal course of study of the Institution Education Scheme or that of some other recognised professional institution. These schemes usually involve five years study in addition to the two years with the undertaking prior to national service. During this five-year period a pupil might show such ability as to warrant the board sending him to a university in preparation for an area appointment.

(c) The third type of pupil, selected for group level, would be drawn from among those who during that five years training show that they are unsuitable for promotion to a position at divisional level. This class might also be augmented by the brighter young men from among the craftsmen and laboratory apprentices.

There are no doubt many other ways of achieving the same object and those appointed by the Gas Council to do so will consider them before deciding on their final scheme, but I do feel that an important factor is the personal responsibility of the senior official under whom the pupil is being trained.

At most large centres pupils taking chemistry and accountancy can usually obtain the necessary training and education at local technical colleges up to intermediate degree standard, but the number of students in a specialised subject like gas engineering may not be sufficient to justify the local authority in providing the necessary technical classes. In such cases the area board might well consider the appointment of a qualified instructor to travel round the area giving weekly lectures at the principal centres to students specially released to attend day classes.

There should be special conditions of service applicable to all students covered by these proposals. The greatness of an industry is limited by the efficiency of those serving it. Great care is therefore necessary to ensure that only the right kind of pupil is selected who, having proper and adequate facilities, will one day emerge as a leader in the industry. As a corollary to this, it is essential that such pupils be paid a reasonable and even a generous salary in relation to the technical grades. Anyone proving himself to be below the required standard could then be demoted or dismissed without question. Furthermore, every pupil from the very start of his service should be considered to be a part, however small a part, of the management and should be sustained as such by the other officials.

Such a progress of training which stresses the personal responsibility of a divisional manager or other departmental chief would, it is suggested, adequately provide for the requirements of the new organisation of the gas industry while retaining the best that we knew in the old days and would, I think, hold out to the junior of tomorrow even brighter prospects than those his father knew. The man who could formerly rise to engineer and manager of a small undertaking and who could go no further can now become a group manager. Over a group of large undertakings there is now a divisional manager, and in 12 area boards there are now prospects previously confined to such large organisations as the Gas Light and Coke Company. We older ones have lost something of our independent status and we miss it, but those who follow on have never had it, and so will never miss it.

The new generation of junior has without any shadow of doubt something worthwhile to live for and to strive for.

WATER GAS TAR EMULSIONS — (*Concluded from p. 208.*)

formed varies directly as the amount of tar fog present in the outlet gas stream of the detarrer.

The tar fog present at the outlet of the detarrer increases considerably with a decrease of the current or an increased throughput. Thus the reduction of the amount of oil-water depends primarily on the efficient operation and control of the electrostatic detarrer.

It will have been noticed that the make of puddle per 1,000 cu.ft. gas made was greater in 1950 than in 1949. This increase was undoubtedly due to the rise in the demand for gas in the winter months with consequent overloading of plant to satisfy public demand. It may also appear at first sight that the amount of puddle made compared with the amount of tar produced is very high, but enquiries made round the district and in other groups show that such a situation is the rule rather than the exception.

Ten Senior Ministry of Supply apprentices have completed a special 10 weeks' course arranged by the School of Gas Turbine Technology, Farnborough. The apprentices, all of whom are in the last stages of their Ministry of Supply five-year training, came from the R.A.E. (Farnborough), the Royal Ordnance Factory (Redway Green), the Royal Small Arms Factory (Enfield), and the National Gas Turbine Establishment. It is hoped to make this course an annual feature in future.

TOWN GAS FROM BROWN COAL

By R. S. ANDREWS, D.Sc., M.I.Chem.E., F.R.A.C.I.
Chairman of the Gas and Fuel Corporation of Victoria, Australia.

From a Presidential Address to the Australian Gas Institute, November, 1951.

FOR the past 70 years coal from the Greta seam on the South Maitland field has supplied the needs of the Australian gas industry with the exception of those works which operate in the region of Brisbane.

The Greta seam, which contains some of the richest coal in the world, reaches a maximum thickness of 34 ft., but in places only the bottom 12 ft. to 15 ft. have been mined, leaving a large proportion of the coal underground, much of which may never be recovered.

Attention has been drawn to these circumstances in Report No. 34 of the N.S.W. Mines Department, an extract of which is as follows:—

> In the opening and development of this portion of the field, the object has been the production of as large an output as early as possible to meet the demands of a growing market, consideration not being given to the most efficient method of laying out and working the whole seam, so as to provide supplies for the future. The result has been to obtain maximum production from these exceedingly rich and comparatively easily worked deposits, with a prodigious waste of a great asset.

The South Maitland field's output of large coal is insufficient to meet the expanding needs of the gas industry. Furthermore, the underground production on this field in the past few years has fallen by 30%, due to lack of labour.

So long as a shortage of coal exists it is inevitable that a proportion of the Maitland coal mined will be used for purposes other than gas production. This, coupled with the limited life of the field, demands that the gas industry consider other sources of coal, first to supplement, and eventually replace, its needs. In so doing it would seem advisable for the industry to turn to the specific reserves, so far as is practicable, in each State to obtain the vital raw material, and thus avoid undue transport.

A Simple Problem

In Queensland the problem is comparatively simple. The rich gas-making coals of the Walloon type, if washed, and blended with 20% of a caking coal, and carbonised in continuous verticals, should meet the metropolitan needs of that State. Evidence also suggests that this coal and the non-caking sub-bituminous coal of the Collie field, Western Australia, would also be suitable for complete gasification. In New South Wales the coal of the Upper Marine series occurring in the Burragorang Valley, which is now considered to possess workable reserves of considerable magnitude would appear to have possibilities in meeting the industry's future needs. It would be necessary to wash this coal and possibly coke ovens would present the best method of carbonisation.

In South Australia the Leigh Creek field seems to be too remote and the life of open-cut coal of insufficient length to warrant any departure from present procedure in the near future.

In Victoria, the wealth of brown coal, particularly in the Latrobe Valley, demands, in the interests of both State and Commonwealth, that every effort should be made to produce town gas from this commodity.

Brown coal is very different from black. The two materials are not readily interchangeable. Before brown coal can be used efficiently conventional equipment has to be either considerably modified or completely re-designed. Furthermore, its properties are such that it requires different methods of handling, storing, and transportation. The main properties which distinguish brown coal from black are:—

(1) Its brown colour and earthy nature.
(2) High moisture content.
(3) Low heating value.
(4) High oxygen content.
(5) Extreme friability.
(6) Rapid deterioration in storage.
(7) High reactivity.
(8) The ease with which it spontaneously ignites.
(9) Its non-coking properties, and gas from carbonisation contains from 25% to 30% of CO_2.

Its use presents an array of problems which do not confront those who produce town gas by conventional methods from black coal.

The inherent properties of brown coal are such as to render it impracticable to gasify it in established black coal gas plants. Thus special equipment has to be devised. As Germany is the only country which has developed her brown coal resources to any extent, it is only natural that she should turn her attention to the production of town gas from this commodity.

Her approach to the problem may be divided into three phases:—

(1) The blending of black coal with brown coal briquettes and gasifying them in established black coal gas plants.
(2) The modification of black coal gas equipment to meet the special peculiarities of brown coal.
(3) The development of special plant for the sole purpose of town gas production from brown coal.

Lurgi System

The first was a complete failure owing to the very divergent properties of the two materials. The second was merely an expedient and lacked universal appeal.

From the third phase emerged the Lurgi high pressure gasification system, involving the gasification of brown coal with steam and oxygen under a pressure of 20 to 30 atm. It is the only method of town gas production from brown coal to have become established.

It is the Lurgi process which has been selected for adoption in Victoria. Orders have been placed for the plant and the initial units should be in operation within four years. It is anticipated that in 30 years all black coal for gasification in Victoria may be replaced by brown coal briquettes. High pressure pipelines will connect the Metropolis and main country centres with the Morwell producing area. We thus see that a programme is unfolding which will render Victoria self sufficient in solid fuel for gas production and at the same time release black coal for expansion in N.S.W.

Behind black coal gasification is more than a century of world experience, but behind brown coal gasification is only a decade of German experience. While initial difficulties are bound to occur the Lurgi Gesellschaft have given assurances of success. Thus it is hoped that within a few years the people of this State will have ample supplies of clean gaseous fuel which every modern community demands.

Three possibilities present themselves for consideration in Australia.

(1) Greater dependence upon Indonesia for oil supplies.
(2) Erection of more refineries in Australia with ample underground storage for crude oil.
(3) Synthetic production of liquid fuel.

If a large synthetic liquid fuel plant were to be erected here it must be obvious that the first consideration is cheap coal; thus any won by underground mining can be dismissed. Only cheap open-cut coal would be suitable. The second consideration would demand that abundant coal be present in the area to warrant the necessary expenditure on the project.

Three coalfields present themselves for consideration. The first is Blair Athol in Queensland, where 200 mill. tons of coal 80 ft. in thickness is on the surface. Blair Athol, however, is inland and remote from the main areas of usage.

The second is the newly discovered field at Ravensworth, near Singleton, N.S.W., where over 100 mill. tons is near the surface. This would be ideal, but it may be advisable, to keep such a deposit of high grade easily won coal for cases of national emergency and not confine its use to one project.

The third is the brown coal of the Latrobe Valley, Victoria. While it would take three times the quantity of this coal to produce one ton of liquid fuel as the other two mentioned, it can be mined for less than one-third the cost. While the Latrobe Valley economically and strategically would appear to be the best area in Australia, only defence reasons could warrant the expenditure on such a project.

Since the war, however, a modified process has been conceived in Germany by Dorschner, embodying the Fischer-Tropsch principles. It involves a combination of town gas and synthetic liquid fuel production and would appear to be more favourable than previous conceptions for implementation under conditions prevailing in Australia. With combined synthetic liquid fuel and rich town gas manufacture the gas industry in Australia could replace nearly 50% of imported liquid fuel.

Coke from Brown Coal

A further need for the internal economy of every State is adequate supplies of coke for special purposes. There are uses requiring coke which neither black coal nor brown coal briquettes can satisfy.

It is well known that under normal circumstances brown coal does not form a coke on carbonisation, but a soft friable char, difficult to store, handle, or transport, and which is unsuitable as a domestic or industrial fuel. Recent researches in Germany, however, have revealed that if brown coal is shock dried, which forces it into a fine state of division, and briquetted in ring-roll presses at approximately three times the pressure now employed here, and subsequently carbonised, a coke of good and mechanical strength is produced.

Such coke has been produced in Germany in Lurgi Spühlgas plants. The objective, however, was to obtain tar and benzole, and high tar content brown coals were used. In order to obtain a high tar yield carbonisation was carried out at low temperatures (650°C); consequently the resultant coke possessed a high reactivity. While such coke is eminently suitable for general domestic use, coke hot water services and slow combustion stoves, it is not suitable for use in shaft furnaces such as lime kilns, cupolas, blast furnaces, or water gas plants.

When used in shaft furnaces, the high reactivity of the fuel causes the chemical reactions to take place within a narrow zone and thus the heat is not spread throughout the charge. Furthermore, abnormal quantities of carbon monoxide are formed which represent a substantial thermal loss.

For metallurgical purposes it would appear that there are two alternatives:—

(*a*) To produce a coke of lower reactivity than that produced in Germany, or
(*b*) adapt metallurgical equipment to the use of a highly reactive fuel.

At present there is a market in Victoria for approximately 3,000 tons per week of coke which brown coal briquettes could not replace. It is probable that requirements for this fuel in the future will increase. It would thus appear that the production of 'hard coke' from brown coal will be necessary.

Units for carbonising the special briquettes would form part of the gas-making plant and the gas derived therefrom would be compressed and mixed with crude Lurgi gas for purification and subsequent distribution.

Research is being conducted in the Engineering School at the University of Melbourne in collaboration with the Gas and Fuel Corporation to investigate fully the production of 'hard coke' from brown coal.

From the foregoing one can visualise the unfolding of a gigantic chemical engineering project which could well form the nature of the gas industry which would not only supply gaseous and solid fuel to the community, but also compressed rich gas for use as motor fuel for road and rail, oil petrol, diesel fuel, and phenolic compounds from the tar as raw materials for plastics.

The successful implementation of such a conception would lift the gas industry to a plane whence it could make a maximum contribution to our national welfare and security. Such a scheme is dependent upon coal.

Conclusion

One of the greatest problems in this country is to obtain sufficient coal to meet the needs of a growing population. At present production is nearly 4 mill. tons per annum below that required for satisfactory internal economy. By 1953 a further 2 mill. tons per annum will be necessary. That means in 1953 N.S.W. will have to produce 18 mill. tons of coal. For the past 30 years production in that State has been between 11 and 12 mill. tons per annum, and there appears to be no immediate prospect of a rapid increase.

With coal shortage and introduction of mechanisation, pre-war selective mining has gone. The entire face is being worked irrespective of bands, with consequent reduction in quality. This inferior material is being transported to the four corners of the Commonwealth and the low quality is militating against its efficient usage.

Australia is in the same predicament as was the United States at the dawn of the present century, when migration and rapid growth of industry demanded expansions of underground mining before surface equipment was ready to clean and screen it for market. Australia is bringing more people into the country at the present time per head of population than America did at any time in her history.

It remains for this generation to maintain our living standards and lift the coal mining industry from its 19th century outlook.

COAL INDUSTRY COMPENSATION

TOTAL Compensation for all interests transferred to the National Coal Board under the Coal Nationalisation Act is estimated by Sir Frank Tribe, Comptroller and Auditor-General, in a recently issued White Paper, to be between £250 mill. and £300 mill. Compensation paid under the Act by stock issues and money payments amounted to £140,100,000 at December 31, 1951, of which £40,700,000 represented final settlements.

Settlement of compensation due to individuals could not be effected until the district valuation boards had certified the values, the report stated. No such certificates had been issued at December 31 last in respect of the 'coal industry value.' Some stock issues had been made in partial satisfaction, but a large part of the global sum of £164,700,000 still remained to be distributed.

In the case of 'value for subsidiary purposes,' certificates of value had been issued in respect of all railway wagons and nearly all stocks and stores. Money payments totalling £43,400,000 in respect of these items had been made by the end of 1951. Few certificates had been issued, however, in respect of brick works, coke ovens, and houses, for which compensation is expected to involve 'at least £40 mill.'

TRADE NEWS

Dawe Instruments

IN industry there are very many cases where it is required to measure wall thickness where only one surface is available. Ultrasonic methods can be employed for virtually any wall thicknesses of both metallic and non-metallic substances likely to be met with commercially. Two such methods are available—namely, the ultrasonic pulse

Measuring the thickness of a receiving vessel.

method, and the ultrasonic resonance method. The ultrasonic resonance method has the same advantages as the pulse method in accuracy, simplicity of operation and absolute calibration, and it has the additional advantage that it requires no measurement of time, so that the whole instrument can be made simple and robust. The Dawe ultrasonic thickness gauge, which works on this principle, is self-contained, since it works from dry batteries housed within a 12 in. × 14 in. × 8 in. case. Moreover, the weight of the instrument is only 23 lb., so that it can be slung over the operator's shoulder and carried about all day.

This small size is extremely useful for all types of application, but more particularly for pressure vessels. The instrument will pass through a porthole of only 18 in. diameter, such as is often found on this type of vessel. The absence of any cathode ray tube is a big advantage for many grades of work, where the incorporation of such a device would almost automatically exclude the use of the instrument. In addition, the absence of any connection to an electrical main means that these thickness gauges can be slung into any other awkward position. Since no mains supply is required, this type of thickness gauge can also be taken over all types of terrain to inspect pipelines and the like.

This type of thickness meter has the advantage that it tends to record low on surfaces marred by rust and the like. In fact, when measuring, say, against a scale-covered surface the thickness of the scale is not measured, although there is usually a reduction in signal strength which does not, however, affect the accuracy of the measurement. Also, paint has no effect on the reading.

The chemical, petroleum, and gas industries are all cases where independence from a mains supply and the ready portability of the instrument are of outstanding value.

Much chemical equipment, such as fractionating columns, gasholders, oil storage tanks, etc., are high and bulky, and a small instrument which can be carried up ladders and along cat walks is valuable. Again, the Dawe ultrasonic thickness gauge can be applied without shutting the plant down. By this means a foreknowledge of possible weakness can be obtained before it actually becomes serious, and this enables maintenance to be put in hand when it is most convenient and most economical.

The instrument is being produced under license from Branson Instruments, Inc., and the General Motors Corporation of America.—*Dawe Instruments, Ltd., 83, Piccadilly, London, W.1.*

Photostat, Ltd.

A PRODUCT of interest to the engineering drawing office, introduced in the United States during recent years and now available in this country, is 'Duostat' Autopositive document paper. This lightweight photographic material is outstanding in that it produces a positive copy direct. The paper is coated with a high contrast emulsion of a speed suitable for use with all types of continuous copying machines and reflex printers; it needs standard photographic processing only and can be used under normal room lighting conditions.

The applications to drawing office procedure are numerous. Drawings can be kept in their original condition by making an Autopositive copy and using this to produce the dyelines or blue-prints. In practically every case the shop prints made from the Autopositive copy are superior in quality to those which could be obtained from the original drawing; this improvement is particularly noticeable when copying old and creased originals, the line density being strengthened and the background cleaned up. Frequently satisfactory dyelines or blueprints can be produced from an Autopositive copy of a faded drawing which itself would not render a legible shop print.

An Autopositive copy of a dyeline or blueprint will enable further prints to be produced if the original tracing is not available. Where normal photographic material is in use for producing copies on reflex equipment, a great saving in time and cost can be effected by making the master positives direct, eliminating the intermediate negative. Normal room lighting can be used and line distortion through paper stretch reduced to negligible proportions.—*Photostat, Ltd., Adelaide House, London Bridge, E.C.4.*

J. & R. Fleming

THE recent introduction of British-made Armorglas toughened lenses for goggles by J. & R. Fleming, Ltd., is of interest. Armorglas is prepared by specially heat-treating and cooling glass so that the resulting tensions produce a lens with very tough surfaces which will withstand the impact of a heavy blow. In fact, before it leaves the factory, each lens is tested by having a steel ball, $\frac{7}{8}$ in. diameter and weighing 54 grams, dropped on to it from a height of 54 in. Lenses tested to destruction in the factory have proved to be able to withstand several blows.

When Armorglas does break, it fractures into cubical pieces without sharp edges, which are unlikely to damage the eye seriously and in actual use it has been found that the rim of a goggle or spectacle will usually hold the Armorglas in place after it is broken until the rim is loosened to permit the fitting of a new lens. Armorglas Rx lenses are also available for those who need to wear corrected lenses but these need to be carefully fitted by the ophthalmic practitioner who prescribed the lenses and so cannot be obtained direct from the manufacturers.—*J. & R. Fleming, Ltd., 146, Clerkenwell Road, E.C.1.*

Trade Publications

A hitherto unpublished synopsis of the history of the firm of Messenger & Sons (Birmingham), Ltd., has been received.

The firm commenced its manufacturing activities in 1747 and, although there have been a few changes in company titles, there has been an unbroken run of brasswork manufacture, for an unlimited number of purposes, amounting to a total of 205 years. Exhaustive investigations into the activities of the original Mr. Messenger and the changes that have taken place since he first commenced make an interesting story.

The firm occupies extensive premises in Greet, Birmingham, and, at present, turns out hot brass pressings in huge quantities for the gas and other industries, a full range of which will be displayed in the British Industries Fair at Castle Bromwich this year.

We also acknowledge with thanks the following:

Keith Blackman, Ltd. 'Tornado' Publication No. 21 (2nd Edition), dealing with 'Extravent' window fans for offices, restaurants, etc.

Simon-Carves, Ltd. Booklet detailing the Nichols Freeman Flash Roaster for the roasting of pyrites and other sulphur-bearing minerals for sulphuric acid production.

The Visco Engineering Co., Ltd. Pamphlet No. 523, giving illustrations and particulars of a few installations carried out in the industrial ventilation and air conditioning field.

John G. Stein & Co., Ltd. New publication dealing with their range of firebricks with introductory notes and specifications.

(*Continued on p. 223*)

MOMENTOUS *Measures*

A JOURNALISTIC MEASURE No. 25

They'd never heard of 'U.N.O.'
in those far-distant days;
No 'Crises' came to interrupt
their easy-going ways.
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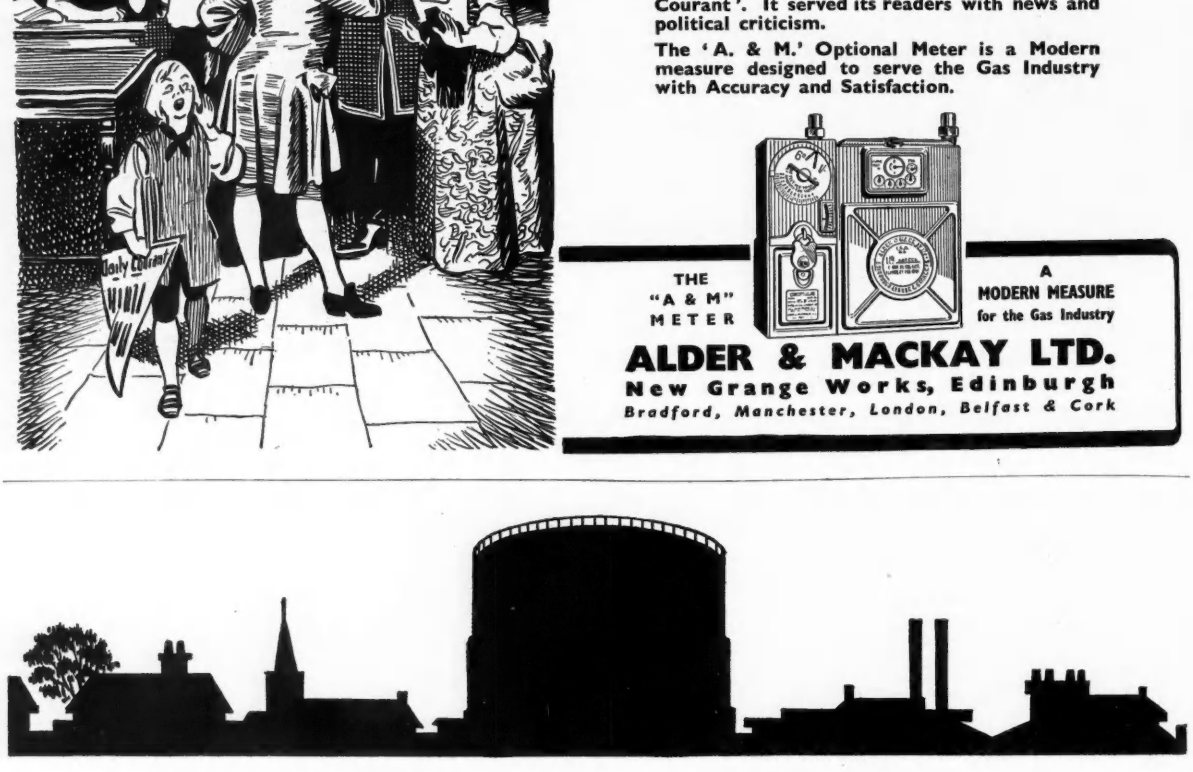

In the Skyline View of a Modern Town
likely enough the outstanding object is one of the

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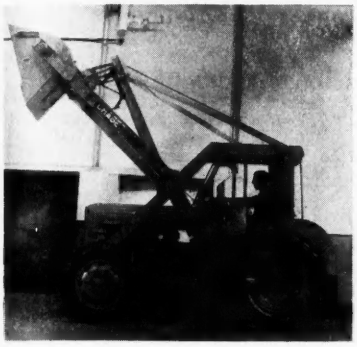
Chaseside

A new and improved version of the Chaseside shovel is now in production, although at the moment for export only. Hydraulic control, now embodied for the first time, means no physical effort beyond finger pressure to operate the winch. Other new features include



The improved 'Hi-Lift' Chaseside shovel powered by the new Fordson Major tractor unit.

easier steering, more comfortable driving position with better visibility, stronger main frame and side arms, and an improved position of the winch and friction rollers. It is powered by the new Fordson Major Tractor unit, and the illustration shows it fitted with ½ cu.yd. 'Hi-Lift' type scoop.

Babcock and Wilcox

The boilers for the new Avenue coke works of the N.C.B. will be of Babcock & Wilcox manufacture. Of the C.T.M. type they will have an evaporative capacity of 60,000 lb. per hour M.C.R. at 475 lb. per sq. in 640°F., and will be the largest Babcock boilers supplied for coke breeze firing at any British gasworks or cokeworks. The contract includes the boiler-house building, pipework, coke conveyors, and ash plant.

The scheme for the Avenue coking plant was first announced by the N.C.B. in October. Located at Wingerworth, three miles south of Chesterfield, it will consist of 106 ovens, carbonising some 750,000 tons of coal a year, and will include benzole rectifying plant, tar distilling plant, gas purifying equipment, and a sulphuric acid plant. The annual output is estimated as 500,000 tons of coke, 3 mill. gal. of benzole and 6 mill. gal. of crude tar, and the capital cost will be in the region of £8 mill. Main contractors are the Woodall-Duckham Co., Ltd., and the N.C.B. says that this is the largest single contract placed since the nationalisation of the industry.—*Babcock and Wilcox, Ltd., London.*

Nevelin Electric

The number of orders received by the Nevelin Electric Co., Ltd., during 1951 confirms a general preference for the glass bulb mercury arc rectifier as a source of d.c. energy for industrial use and despite the serious difficulties created by the shortage of materials, production capacity has been extended to keep pace with the increased demand.

Although the glass bulb mercury arc rectifier can be built for the largest sizes, the Nevelin Company has specialised in the manufacture of equipment up to 1,000 kW rating, and within this range several interesting orders have been received, the tendency being towards equipments of larger rating than previously. During the past 12 months the range of Nevelin twin bulb rectifier cubicles has been extended, and increased outputs can now be obtained from single-unit cubicles of this type.

Nevelin has several drives in hand for gas boosting equipment for area gas boards, and other equipment includes automatically controlled drives for special purpose machine tools and testing equipment. One complete equipment designed and built at the Nevelin works at Croydon, in consultation with the Ministry of Supply, was unusual in that the control was from a portable desk, with provision for connecting sub-standard instruments in circuit.

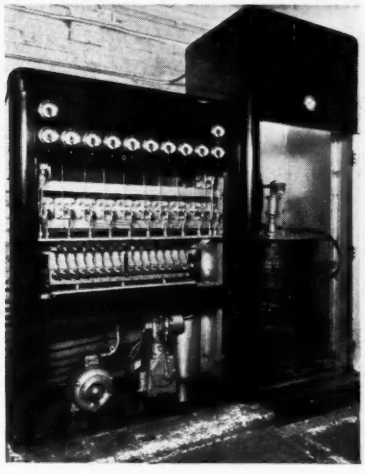
Verrolec, Ltd.

Pipemaster Lightweight is a portable machine, electrically or petrol engine driven, for cutting a perfect thread on pipes or bolts from ¼ in. to 2 in. diameter. In an emergency one operator can drive the unit by hand. It is designed on new principles for use wherever pipes have to be installed, maintained or manipulated. Used on site, it saves time, money and labour. Express Nipples, supplied with every machine, turn even the smallest pieces of pipe into nipples, eliminating waste. Other features are self-centering die head for cutting threads uniformly, use of tangential type dies which can easily be re-sharpened, lead screw and follow-up principle of design to guide the die head during the cutting process, length of thread can be seen and measured whilst cutting.

The machine used with equal advantage in the shop, can cut threads up to 6¼ in. and is immediately read for renewed application. Arrangements are being made for a further model for threads up to 6 in., with automatic switch-off, also for parting and cutting of the victaulic groove. A portable swivel saw for pipes up to 4 in. is available. *Verrolec, Ltd., 27, Balfour House, Finsbury Pavement, Moorgate, E.C.2.*

C. C. Wakefield

To meet the precise lubrication needs of large industrial plant, C. C. Wakefield & Co., Ltd., have introduced an automatic greasing lubrication battery of an improved, up-to-date design. The first model to be built on the basis of data obtained from a strenuously tested



The Wakefield Roll Mill Lubricator at the Appleby-Frodingham Steelworks.

prototype is responsible for the lubrication of the main roll mill bearings and breast rolls of the 42-in. Davy reversing slabbing mill at the Appleby-Frodingham Steel Company, Scunthorpe. It has been in use there since November, 1951.

This new Wakefield Lubricator is unusually compact: although the equipment is as comprehensive as may be expected, it is completely housed in a steel cabinet roughly the same size as an average wardrobe. Appleby-Frodingham engineers carried out the actual installation.

Although entirely new in layout, the design and operation of the lubricator is very straightforward. Both the front and back panels and door are completely removable for easy maintenance, and may be locked in place upon reassembly. Every bearing is fed with grease by a piston which is actuated by oil under pressure. Grease output is claimed to be ample for all industrial purposes, and there is an automatic alarm and safety system should the pressure in any of the grease lines exceed the permissible limits.—*C. C. Wakefield & Co., Ltd., Grosvenor Street, London, W.1.*

Lancashire Dynamo Switchgear

A COMPANY specialising in the manufacture of switchgear has now been established by the Lancashire Dynamo organisation to give full effect to the increased production of an extended range of heavy industrial fuse switches and switchboards. The new Company will be known as Lancashire Dynamo Switchgear, Ltd., and production has already been established at Bridgwater, Somerset. This development follows the transfer of the manufacture of heavy industrial switchgear and switchboards from the Wimbledon works of Foster Transformers & Switchgear, Ltd. (another Lancashire Dynamo Company), to Bridgwater in June of last year.

The range of equipment manufactured by the new Company will comprise 25 MVA internationally tested fuse-switches in capacities from 30 to 400 amp. and 'unit to unit' heavy industrial switchboards specially designed for customers' individual requirements.

An illustrated catalogue, giving full details, is available on request from: *Lancashire Dynamo Switchgear, Ltd., Bristol Road, Bridgwater, Somerset.*